

110TH CONGRESS }
2d Session

HOUSE OF REPRESENTATIVES

{ REPT. 110-528
Part 1

DISMISSING THE ELECTION CONTEST RE-
LATING TO THE OFFICE OF REPRESENTA-
TIVE FROM THE THIRTEENTH CONGRES-
SIONAL DISTRICT OF FLORIDA

REPORT

OF THE

COMMITTEE ON HOUSE ADMINISTRATION

TO ACCOMPANY

H. Res. 989

Part 1 of 3



FEBRUARY 14, 2008.—Referred to the House Calendar and ordered to be
printed

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THIRTEENTH CONGRESSIONAL DISTRICT OF FLORIDA—PART 1 OF 3**

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U.S. GOVERNMENT PRINTING OFFICE

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TASK FORCE FOR THE CONTESTED ELECTION IN THE 13TH CONGRESSIONAL
DISTRICT OF FLORIDA

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DISMISSING THE ELECTION CONTEST RELATING TO THE OFFICE OF REPRESENTATIVE FROM THE THIRTEENTH CONGRESSIONAL DISTRICT OF FLORIDA

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Mr. BRADY of Pennsylvania, from the Committee on House Administration, submitted the following

R E P O R T

[To accompany H. Res. 989]

The Committee on House Administration, having had under consideration an original resolution dismissing the election contest relating to the office of Representative from the Thirteenth Congressional District of Florida, report the same to the House with the recommendation that the resolution be agreed to.

COMMITTEE ACTION

On, February 12, 2008, by unanimous voice vote, a quorum being present, the Committee agreed to a motion to report the resolution favorably to the House.

COMMITTEE OVERSIGHT FINDINGS

In compliance with clause 3(c)(1) of rule XIII of the Rules of the House of Representatives, the Committee states that the findings and recommendations of the Committee, based on oversight activities under clause 2(b)(1) of rule X of the Rules of the House of Representatives, are incorporated in the descriptive portions of this report.

STATEMENT ON BUDGET AUTHORITY AND RELATED ITEMS

The resolution does not provide new budget authority, new spending authority, new credit authority or an increase or decrease in revenues or tax expenditures. Thus, clause 3(c)(2) of rule XIII of the Rules of the House of Representatives and the provisions of section 308(a)(1) of the Congressional Budget Act of 1974 are not applicable.

TASK FORCE ON THE CONTESTED ELECTION

Pursuant to Rule 16(b) of the Rules of Procedure of the Committee on House Administration, the Honorable Juanita Millender-McDonald, Chairwoman of the Committee, established a Task Force on March 22, 2007 to oversee matters related to the election of a Representative from the 13th Congressional District of Florida to the House of Representatives and to recommend to the Committee the final disposition of the election contest filed by Christine Jennings (“Contestant”) against Vern Buchanan (“Contestee”) pursuant to the Federal Contested Elections Act (FCEA), 2 U.S.C. §§ 381–396.

STATEMENT OF FACTS

Introduction

This report relates to the election contest concerning the 2006 general election for the House of Representatives seat for the 13th Congressional District of Florida. This election contest arises under the United States Constitution, Article I, § 5, and is brought pursuant to the FCEA, 2 U.S.C. §§ 381–396. The House of Representatives has the express and final authority to judge the elections and returns of its own Members.¹

2006 General Election for the 13th Congressional District of Florida

On November 7, 2006, Republican Vern Buchanan and Democrat Christine Jennings competed in the general election to represent the open seat for the 13th Congressional District of Florida (“District-13”).² Of the 238,249 votes cast, Contestant received 118,737 votes and Contestee received 119,105, a 368-vote margin of victory.³ Pursuant to Florida law, the Florida Elections Canvassing Commission ordered a recount to verify the small margin of victory.⁴ Following the recount, on November 20, 2006, the Elections Canvassing Commission certified 119,309 votes for Contestee and 118,940 votes for Contestant, with Contestee prevailing by 369 votes.⁵

The election results, however, were controversial, as Sarasota County reported an almost 15% undervote, an unusually high number of undervotes compared to other counties in the District. Of the 123,901 ballots cast in Sarasota County, 18,000 did not show a vote cast for the District-13 race.

Proceedings Involving Florida Secretary of State’s Office

On November 9, 2006, the Florida Secretary of State directed the Florida Division of Elections, Bureau of Voting Systems Certification to conduct an audit of Sarasota County’s voting system and election procedures to assure that the voting system used in Sarasota County was not responsible for the unusually high number in the Congressional race in the county. On November 28, 2006, Flor-

¹ U.S. Constitution Article I, Section V, Clause 1.

² The District-13 seat was formally held by Representative Katherine Harris, who decided to run for the United States Senate rather than for re-election to the House.

³ Wallace, Jeremy. “Democrats Seize House; Crist In; Buchanan Leads; Slim 368-vote margin will trigger a recount for the 13th District.” *Sarasota Herald-Tribune* 8 November 2006.

⁴ Florida Election Code § 102.141(6).

⁵ Official Certificate of the State Elections Canvassing Commission of the General Election Held On the Seventh Day of November 2006. (See Appendix F)

ida's audit team commenced two parallel tests on the Election Systems & Software (ES&S) iVotronic touch screen voting systems. These parallel tests were designed to simulate mini-elections on five voting systems to test Election Day vote totals cast on the machines and assess whether the undervote count observed during the District-13 race could be replicated. On December 15, 2006, pursuant to the Florida Secretary of State's request, Florida State University's Security Analysis in Information Technology (SAIT) Laboratory conducted a software review and security analysis of the ES&S iVotronic firmware. The final audit report released by the Florida Department of State on February 23, 2007 found no evidence to suggest or conclude that the official certified election results did not reflect the actual votes cast.⁶

Proceedings Involving Florida's Courts

On November 20, 2006, Contestant filed a contested election suit in Florida's Circuit Court for the Second Judicial Circuit.⁷ Contestant argued that Florida's certified vote totals excluded thousands of legal votes that were cast in Sarasota County due to malfunctioning electronic voting machines.⁸ Contestant subsequently requested access to the ES&S hardware and software in possession of the state and county to test whether the iVotronic voting system in fact malfunctioned and caused the undervotes.⁹ The state, county, and ES&S defendants jointly objected to Contestant's production request, arguing that these materials were trade secrets belonging to ES&S.¹⁰ In addition to the defendants' objections, ES&S requested an evidentiary hearing to determine the necessity of Contestant's request for the hardware, software, and source code. Judge William Gary granted ES&S's request and held an evidentiary hearing on December 19 and 20, 2006. On December 29, 2006, Judge Gary issued an order denying Jennings access to the ES&S hardware and software.

On January 3, 2007, Contestant filed an emergency motion in Florida's First District Court of Appeal to expedite proceedings and appeal of the trial court's ruling. On January 24, 2007, the appellate court granted Contestant's motion to expedite. On June 18, 2007, the First District of Appeal denied the Contestant's motion to compel discovery and access to proprietary information, including voting machine source code technology. No further action was taken by the courts or the parties over the following five months, and the Contestant withdrew her challenge in the Florida courts on November 26, 2007.

⁶Florida Department of State, Division of Elections *Audit Report of the Elections Systems and Software, Inc.'s iVotronic Voting System in the 2006 General Election for Sarasota County*. Florida: 2007. (See Appendix D)

⁷Contestant filed the contested election suit in the Florida's Circuit Court of the Second Judicial Circuit under Florida Election Code 102.168.

⁸*Jennings v. Election Canvassing Commission of the State of Florida*, Plaintiffs' Compliant to Contest, 20 November 2006. (See Appendix E)

⁹ERR14*⁹*Jennings v. Election Canvassing Commission of the State of Florida*, Plaintiffs' Motion to Compel Expedited Discovery, 20 November 2006. (See Appendix E)

¹⁰ERR14*¹⁰*Jennings v. Election Canvassing Commission of the State of Florida*, State Defendants' Response to Plaintiff Jennings' Request for Production of Documents and for Inspection of Tangible Things, 5 December 2006. (See Appendix E)

PROCEEDINGS BEFORE THE COMMITTEE ON HOUSE ADMINISTRATION

On December 20, 2006, in addition to her state court suit, Contestant filed a Notice of Contest with the House of Representatives under the FCEA¹¹ and pursuant to the authority vested in the House by the U.S. Constitution.¹² On January 4, 2007, the late Committee on House Administration Chairwoman Millender-McDonald wrote to the appellate court to express concern whether the State's proceedings regarding access to evidence that could resolve the contested election matter at the State level would facilitate resolution of the election contest proceedings pending before the House.¹³ A complete record, she opined, would facilitate the House's consideration of the pending contest.

On January 4, 2007, Contestee was sworn in as a Member of the One Hundred and Tenth Congress. On January 19, 2007, Contestee filed a Motion to Dismiss in which he argued that the Contestant's case was based upon nothing more than conjecture and speculation. In support of his characterization of the contest, Contestee pointed out that the State of Florida conducted an audit of the voting systems in Sarasota County and found that they operated properly.¹⁴

On January 22, 2007, Chairwoman Millender-McDonald requested that Sarasota County Supervisor of Elections Kathy Dent preserve all materials utilized in conjunction with the Federal general election held on November 7, 2006.¹⁵ On January 26, 2007, Sarasota County replied that it needed to deploy approximately 800 of the 1,600 voting machines used in the November 2006 general election for its March 2007 municipal election.¹⁶ On February 7, 2007, Chairwoman Millender-McDonald, relying on expert advice that testing all the machines would be unnecessary in determining whether the machines were responsible for the undervote, and the County reached a compromise wherein the county could deploy 800 voting machines for use in the March election.¹⁷

On March 23, 2007, Chairwoman Millender-McDonald established a three member Task Force to oversee matters relating to the District-13 election contest. For the Majority, Chairwoman Millender-McDonald appointed Representative Charles Gonzalez as Chair and Representative Zoe Lofgren as a member of the Task Force. On April 16, 2007, Ranking Member Vernon Ehlers recommended Representative Kevin McCarthy to serve as the Minority member of the Task Force. Shortly after Chairwoman Millender-McDonald's passing on April 22, 2007, the then-acting Chairman, Representative Robert Brady, appointed Representative Kevin McCarthy to serve as the Minority Task Force member on April 25, 2007.

The Task Force first met on May 2, 2007, when it unanimously voted to retain the Government Accountability Office (GAO) to investigate whether the voting machines used in Sarasota County

¹¹ 2 U.S.C. §§ 381–369.

¹² U.S. Constitution, Article 1, Section V.

¹³ Millender-McDonald, Chairwoman Juanita, Letter to Mr. Jon Wheeler, 2 January 2007 (See Appendix E). On January 10, 2007, the appellate court notified the Chairwoman that her correspondence would not be docketed and considered by the panel of judges deciding Contestant's case.

¹⁴ *Jennings v. Buchanan*. Contestee's Motion to Dismiss Election Contest, 19 January 2007. (See Appendix F.)

¹⁵ For document see Appendix B.

¹⁶ For document see Appendix B.

¹⁷ For document see Appendix B.

contributed to the unusually high number of undervotes. The GAO was also asked to evaluate and recommend whether additional testing was needed to establish whether the voting machines contributed to the undervote.¹⁸

On June 14, 2007, the Task Force unanimously approved the GAO's Engagement Plan, which detailed its scope of work and approach to determine to what extent the voting machines used in Sarasota County could have contributed to the large undervote and ascertain whether additional testing was needed to determine whether machine malfunction contributed to the undervote.¹⁹ The Task Force also agreed that Chairman Gonzalez would transmit the GAO Engagement Plan to both parties to the contest and provide them seven days to comment on the plan. The parties were asked to address central questions relating to the adequacy or inadequacy of prior testing of the electronic voting machines, whether additional tests were needed, and provide suggested testing protocols in the event that additional testing was required.²⁰ Further, the Task Force agreed that Chairman Gonzalez should notify all individuals, offices, and entities identified in the GAO plan that the Task Force sought their full, prompt, and voluntary cooperation with the GAO.²¹

On June 27, 2007, before the GAO completed its Engagement Plan, Representative Kevin McCarthy wrote to Chairman Gonzalez regarding media reports, one of which urged Contestant to consider conceding the election.²² Representative McCarthy requested that the Task Force prepare a contingency plan to resolve the election contest in the event that Contestant opted to concede the race to Contestee. On June 28, 2007, Chairman Gonzalez informed Representative McCarthy that the Task Force would not entertain a contingency plan to end the contested election proceedings based on bare speculation regarding the Contestant's future intentions.²³

On August 3, 2007, at a public meeting of the Task Force, the GAO provided a status report on the progress of its Engagement Plan. The GAO testified that it had been analyzing ballot results and reviewing existing testing efforts such as the Florida election audit. The GAO also offered its preliminary observations of the Florida parallel test, source code review, and audit of the Sarasota County voting systems.²⁴

On October 2, 2007, the GAO stated that further testing could provide increased assurance that the voting systems did not cause

¹⁸ Government Accountability Office, *Engagement Plan for Review of Voting Equipment Used in Florida's 13th Congressional District during the 2006 General Election*. District of Columbia: 14 June 2007. (See Appendix C)

¹⁹ *Meeting to Discuss the Status of the Investigation into the FL-13 Congressional District Election: Meeting Before the Committee on House Administration* 110th Cong., 1st Sess. Page 21 (June 14, 2007).

²⁰ Gonzalez, Charles, Letter to Mr. Sam Hirsh & Mr. Hayden Dempsey, 15 June 2007. (See Appendix B)

²¹ Gonzalez, Charles, Letter to Ms. Dent, Mr. Browning, Ms. Tuck, Mr. Tesi, & Mr. Burmester, 15 June 2007. (See Appendix B)

²² McCarthy, Kevin, Letter to Rep. Charles Gonzalez, 27 June 2007. (See Appendix B)

²³ Gonzalez, Charles, Letter to Rep. Kevin McCarthy, 28 June 2007. (See Appendix B)

²⁴ *Meeting to Discuss the Status of the Investigation into the FL-13 Congressional District Election: Meeting Before the Committee on House Administration* 110th Cong., 1st Sess. Page 3 (August 3, 2007) (Testimony of Dr. Nabajyoti Barkakati).

the undervotes in Florida's Thirteenth Congressional District.²⁵ During its analysis, GAO found that, while prior testing and reviews by the State of Florida and Sarasota County provided some degree of assurance that certain components of the voting systems in Sarasota County functioned correctly, such testing and reviews were not sufficient to provide adequate assurance that the voting systems did not contribute to the undervotes. Following GAO's testimony, the Task Force unanimously authorized GAO to conduct its recommended testing on the Sarasota County voting systems.

On February 8, 2008, GAO provided the Task Force with the results from the additional testing it conducted on the firmware, ballot, and calibration of the iVotronic touch screen voting machines.²⁶ GAO concluded that the voting systems used in Sarasota County did not contribute to the undervote and further testing was not necessary. GAO also acknowledged that ballot design or voter confusion or apathy in the race could have contributed to the 18,000 undervotes. Following the GAO testimony the Task Force unanimously moved to report to the Committee on House Administration that the election contest in District-13 be dismissed.

On February 12, 2008, the Committee on House Administration met to consider the recommendation of the Task Force for the District-13 election contest. During this meeting, the Committee unanimously voted to report favorably to the House an original resolution to dismiss the election contest.²⁷

BASIS OF CONTEST

In support of her Notice of Contest, the contestant alleged the following grounds for contesting the election: first, she dismissed the reliability of Florida's recount audit, arguing that merely "recounting" electronic ballots (unlike paper ballots) is inevitably a meaningless exercise because the manual "recount" consists simply of printing out the ballot-image reports from the alleged malfunctioning iVotronic systems and counting by hand the ballot images that recorded no choice for the congressional race in question.²⁸ As anticipated, neither the machine nor the manual recount altered or explained the number of congressional undervotes recorded on the iVotronic touch screen voting system in Sarasota County.

Contestant also argued that the undervote total for the congressional race in Sarasota County was abnormal in several respects. The undervote rate on Election Day was 13.9% of the ballots cast on electronic voting machines, and the undervote rate during the early-voting process was 17.6% of the ballots cast on electronic machines. By contrast, of the 22,613 votes cast in this race by paper absentee ballot in Sarasota County, there were just 566 undervotes recorded—an undervote rate of only 2.5%. In addition, the percentage of undervotes for the District-13 race in Sarasota County was

²⁵ *Meeting to Discuss the Status of the Investigation into the FL-13 Congressional District Election: Meeting Before the Committee on House Administration* 110th Cong., 1st Sess. Page 6 (October 2, 2007) (Testimony of Dr. Nabajyoti Barkakati).

²⁶ *GAO Briefing to the Task Force: Report on Findings in the Investigation into the FL-13 Congressional District Contested Election: Meeting Before the Committee on House Administration* 110th Cong., 2nd Sess. (February 8, 2008)

²⁷ *Meeting Before the Committee on House Administration*, 110th Cong., 2nd Sess. (February 12, 2008)

²⁸ *Jennings v. Buchanan*, Notice of Contest Regarding the Election For Representative In the One Hundred Tenth Congress From Florida's Thirteenth Congressional District, 20 December 2006. (See Appendix F)

disproportionately higher than other counties within District-13. The undervote rate for the race was 2.5% in Charlotte County, 2.1% in DeSoto County, 5.8% in Hardee County, and 2.4% in Manatee County. Finally, the percentage of undervotes recorded on electronic voting machines in Sarasota County in 2006 for the congressional race was almost seven times the rate of undervotes for District-13 in the last midterm election (2002), which was 2.2%. Contestant argued that this statistical evidence alone indicated that the large number of undervotes in Sarasota must be attributable to a malfunction of the iVotronic touch screen voting system.

In addition to this statistical evidence, Contestant also submitted as evidence in support of her Notice of Contest affidavits memorializing the eyewitness accounts of hundreds of Sarasota County voters attesting to their difficulties in attempting to cast a vote for Contestant during early voting and on Election Day on the iVotronic touch screen voting system in Sarasota County.²⁹ She also cited numerous contemporaneous official “Incident Report Forms” filed with the Sarasota County Supervisor of Elections documenting widespread occurrences of voters having difficulty getting the iVotronic machines to record votes in the District-13 race.

Finally, Contestant cited a statistical analysis conducted by Professor Charles Stewart III, the chair of the Political Science Department at the Massachusetts Institute of Technology (MIT), to argue that failure of the iVotronic touch screen voting system adversely affected the outcome of the District-13 race. Based on his study of patterns in the undervote rates for other statewide or countywide races in Sarasota County, Professor Stewart estimated that the number of “excess” undervotes caused by the use of the iVotronic machines in Sarasota County was approximately 14,000.³⁰ Using the ballot-image logs for every individual ballot cast electronically in the Sarasota County November 2006 general election—and studying voters’ preferences not only for the congressional race but also for the statewide races for U.S. Senator, Governor, Attorney General, Chief Financial Officer, and Agriculture Commissioner—Professor Stewart estimated that the voters whose congressional ballots were recorded as undervotes likely supported Contestant over Contestee by a margin of approximately 63% to 37%. Accordingly, Professor Stewart postulated that if the 14,000 congressional undervotes had actually been properly recorded and tallied, Contestant would have won the election by more than 3,000 votes—well in excess of the race’s 369-vote margin of victory. Professor Stewart also postulated that even if the machine malfunction caused only 1,500 “excess” undervotes—or less than 10% of the total congressional undervotes reported—proper tabulation of those 1,500 congressional ballots could have reversed the outcome of the election.

²⁹ *Jennings v. Buchanan*, Documentation of Voting Machine Malfunction Appendix to Contestant Jennings’ Memorandum Responding to the Honorable Charles A. Gonzalez’s April 3, 2007 Letter Regarding The Investigation of the Election For Representative In the One Hundred Tenth Congress From Florida’s Thirteenth Congressional District Volume I & II, 13 April 2007. (See Appendix F)

³⁰ *Jennings v. Buchanan*, Notice of Contest Regarding the Election For Representative In the One Hundred Tenth Congress From Florida’s Thirteenth Congressional District, 20 December 2006. (See Appendix F)

STANDING, TIMING, & NOTICE

To have standing under the FCEA, a contestant must have been a candidate for election to the House of Representatives in the last preceding election and claim a right to the contestant's seat.³¹ Jennings was the Democratic nominee and her name appeared as a candidate for District-13 of the official ballot for the November 7, 2006 election, thereby satisfying the standing requirement. The Notice of Contest was served upon Contestee and filed within the prescribed time periods of the FCEA.

RESPONSE BY CONTESTEE

On January 19, 2007, Contestee filed a Motion to Dismiss with the Clerk of the House, in which Contestee argued that the Contestant's contest be dismissed because Contestant: (1) Failed to provide credible evidence sufficient to alter the result of the election; and (2) failed to credibly make a claim of right to Contestee's congressional seat.

In support of his Motion to Dismiss, Contestee argued that his certification by the State of Florida as the winner of the District-13 election constitutes prima facie evidence that the election was conducted correctly and must be afforded a strong presumption of legality and correctness. He argued that the iVotronic touch-screen voting system challenged by Contestant and her experts was tested as required by Florida law prior to the early voting period and Election Day and was found by the State to be working properly. He noted that the State of Florida conducted post-election parallel testing, which concluded that the iVotronic touch screen machines demonstrated 100% accuracy in recording vote selections and "there is no evidence to support the position that the iVotronic touch screens caused votes to be lost."³² Contestee also noted that during post-election litigation a Florida circuit court conducted a thorough review of Contestant's evidence and experts' opinions and concluded that the "testimony of [Jennings'] experts was nothing more than conjecture and not supported by credible evidence."³³

Contestee also argued that Contestant, in her Notice of Contest, failed to provide necessary evidence that: (1) The intent of any single voter was frustrated; (2) any individual voter was unable to cast a vote for her; or (3) a single vote was cast for her but not counted. Contestee argued that the lack of such evidence demonstrated that Contestant could not meet the high burden required to proceed with the Contest or invalidate a certified election.

STANDARD FOR GRANTING MOTION TO DISMISS

The House of Representatives has the Constitutionally vested power to judge its own elections.³⁴ The FCEA sets forth procedures under which a contestant may bring a contest to the House of Representatives. Under the FCEA, it is not sufficient for a contestant merely to allege irregularities or fraud in an election. The contest-

³¹ 2 U.S.C. Sec. 382(a).

³² *Jennings v. Buchanan*. Contestee's Motion to Dismiss Election Contest, 19 January 2007. (See Appendix F)

³³ *Jennings v. Buchanan*. Contestee's Motion to Dismiss Election Contest, 19 January 2007. (See Appendix F)

³⁴ U.S. Constitution Article I, Section V.

ant must claim a right to the office.³⁵ The contestant must support the claim with specific credible allegations of irregularity or fraud that, if proven true, would entitle the contestant to the office.³⁶ Unless a contestant credibly claims in his or her Notice of Contest a right to the office, the House of Representatives will dismiss the contest.³⁷

ANALYSIS

At its first meeting on May 2, 2007, the Task Force had before it the pleadings filed by Contestant, her Notice of Contest Regarding the Election for Representative in the One Hundred Tenth Congress from Florida's Thirteenth Congressional District ("District"), and Contestee's Motion to Dismiss Election Contest. By voice vote, the Task Force initiated an investigation of the District-13 election.³⁸

Under the Committee on House Administration's investigative authority to develop evidence needed to consider a contested election,³⁹ Task Force Chairman Charles Gonzalez secured the assistance of the GAO in connection with the technical analysis of the voting equipment used in Sarasota County. Specifically, the Task Force asked the GAO to review the existing testing and evaluation conducted by Sarasota County, the State of Florida, and the manufacturers of the voting equipment. The review was to include opinions and recommendations of Contestant and Contestee as to the adequacy or inadequacy of the testing performed to date.⁴⁰ Additionally, the GAO was to review the pleadings and supporting documents filed in the contest, and if needed, design, propose, and implement testing protocols to determine the reliability of the voting equipment used.

On June 14, 2007, the GAO presented its plan to review the voting equipment used in the District during the 2006 general election.⁴¹ The high-level objective of the plan, as unanimously approved by the Task Force, was to determine the extent to which the iVotronic voting machines could have contributed to the large undervote in Sarasota County, and to ascertain whether additional testing might be needed. Though the District includes five counties, because Contestant's claims and the Florida state audit focused solely on Sarasota County, the Task Force limited GAO's scope of review to Sarasota County.

During the period June 14, 2007—October 2, 2007, the GAO met with officials from the Office of the Sarasota County Supervisor of Elections, the Florida Department of State and Division of Elections, and ES&S. From its analysis of the prior tests and reviews conducted by the State of Florida and Sarasota County, the GAO found that certain components of the iVotronic touch screen voting

³⁵ 2 U.S.C. Sec. 382.

³⁶ *Pierce v. Pussell*, H. Rep. 95-245 (1977).

³⁷ *Anderson v. Rose*, H. Rep. 104-852 (1996).

³⁸ *Meeting to Discuss Matters Pertaining to the Contested Election in the 13th Congressional District of Florida: Meeting Before the Committee on House Administration* 110th Cong., 1st Sess. Page 12 (May 2, 2007).

³⁹ Rules of the Committee on House Administration, One Hundred Tenth Congress, Rule 16.

⁴⁰ Burhans, Glenn, Letter to Rep. Charles Gonzalez, 22 June 2007. (See Appendix F) Hirsch, Sam, Letter to Rep. Charles Gonzalez, 22 June 2007. (See Appendix F)

⁴¹ *Meeting to Discuss the Status of the Investigation into the FL-13 Congressional District Election: Meeting Before the Committee on House Administration* 110th Cong., 1st Sess. Page 17 (June 14, 2007).

systems in Sarasota functioned correctly and that reasonable assurance of some voting system objectives had been achieved, but these tests and reviews were not enough to provide reasonable assurance that the iVotronic voting systems did not contribute to the undervote.

The GAO indicated that the prior tests and reviews of Sarasota County's iVotronic voting systems had some shortcomings. First, the GAO indicated that "reasonable assurance" that all the iVotronic voting systems used in the 2006 general election used software certified by the Florida Division of Elections was lacking. Second, the ability of voters to make selections in different ways on the iVotronic voting systems and ensure their votes were properly recorded had not been fully tested. Finally, the GAO indicated that prior testing did not provide a clear understanding of whether a miscalibrated machine would have contributed to the undervote. On the basis of GAO's analysis of all prior tests and audit activities conducted on the iVotronic touch screen voting systems in Sarasota County, the Task Force unanimously approved on October 2, 2007, that the GAO should conduct: (1) further firmware testing to verify that the firmware in the iVotronic voting systems used in the Sarasota County machines matched the certified version; (2) ballot testing of the iVotronic voting systems to confirm correct operation; and (3) calibration testing of the iVotronic to understand the effect on the undervote.

During the period November 27–December 4, 2007, the GAO conducted additional testing on the iVotronic touch screen voting system used in Sarasota County. The GAO delivered its report on the process and results of the additional testing to the Task Force at a public hearing on February 8, 2008.

To conduct its tests, the GAO developed test protocols and detailed test procedures, fully outlined in its report and appendices. The GAO met with officials from the Sarasota County Supervisor of Elections, the Florida Department of State and Division of Elections, and ES&S to obtain necessary details about the voting systems and prior tests to document the testing procedures. The GAO also reviewed voting system documentation to develop its testing approach and procedures. To ensure that the certified firmware held in escrow by the Florida Division of Elections corresponded to the source code that was reviewed by a team from Florida State University and the GAO, on November 19, 2007, the GAO visited the ES&S development facility in Rockford, Illinois, and witnessed the rebuild of the firmware from the escrowed source code.

In conducting its firmware verification test, GAO extracted the firmware from a random probability sample of 115 iVotronic touch screen voting systems out of the 1,499 used in Sarasota County's 2006 general election and found that each machine's firmware matched the certified version of firmware held in escrow by the Florida Division of Elections. Based on this statistical approach, the GAO was able to determine with a "99 percent confidence level" that at least 1,439 of the 1,499 machines used the same firmware that was certified by the Florida Division of Elections. Consequently, the GAO reported to the Task Force that it had more confidence in the results of previous source code reviews conducted by itself and Florida State University, which had indicated that the

iVotronic touch screen voting system did not cause the recorded undervotes.

For the ballot test, the GAO cast predefined test ballots on 10 iVotronic machines and confirmed that each ballot was displayed and recorded accurately. The test ballots represented 112 common ways a voter may have interacted with the iVotronic system to select a candidate in the District-13 race and cast a ballot. These tests were performed on nine machines configured as election-day machines and then repeated on one machine configured as an early voting machine.

The GAO finally conducted the calibration test by miscalibrating two iVotronic touch-screen voting machines and casting ballots on them to validate that the machines recorded the information that was displayed on the touch screens. The GAO reported to the Task Force that its tests, involving a total of 10 different miscalibration patterns and capturing 39 ballots, indicated that the machines correctly displayed the selection in the District-13 race on the review screen and correctly recorded the ballot. The GAO further reported that, while the miscalibrated machines were more difficult to use, the selections shown on the screen were the same selection captured by the machine when the ballot was cast.

Based on the results of these tests, the GAO advised the Task Force that it has obtained increased assurance that the iVotronic touch screen voting system used in Sarasota's 2006 general election did not contribute to the large undervote in the District-13 contest. The GAO explained that although absolute assurance is not possible to achieve, since it is unable to completely recreate the conditions of the election during which the undervote occurred, it believes that these test results, combined with the other testing conducted by the State of Florida, statistically eliminate the possibility that the iVotronic touch-screen voting system was the cause of the undervote. The GAO further advised that adequate testing had been performed on the iVotronic system for it to have reached this conclusion, and the GAO did not recommend any additional testing. The GAO did acknowledge that, given the complex interaction of people, processes and technology that must work effectively together to achieve a successful election, there remains a possibility that the large undervote in District-13 could have been caused by either intentional or unintentional factors, such as voters intentionally declining to cast a vote, or voters having difficulty with the ballot layout. Additionally, statistical analysis and theories, including one that attempted to determine voter intent by reviewing other voter selections, failed to provide evidentiary support that would justify the Task Force overturning the election results in light of the machine testing results.

CONCLUSION

Contestant's contest was premised on the allegation that thousands of legal votes cast in Sarasota were not counted due to pervasive malfunctioning of the iVotronic touch screen voting system. On June 14, 2007, the Task Force unanimously authorized the GAO to proceed with its Engagement Plan to test whether these voting machines contributed to the undervote, and on February 8, 2008, the GAO reported that the results of these tests did not iden-

tify any problems that would indicate the iVotronic touch screen voting system was responsible for the undervote.

It is the Constitutional duty of the House of Representatives to investigate a valid election contest, yet only clear and convincing evidence can provide the basis to overcome the presumption of the regularity accorded a State's certified results. Absent such evidence, Florida's certification of the election results in the Thirteenth Congressional District must be confirmed by this House. For the foregoing reasons, and based on the recommendations of the Task Force, the Committee concludes that the contest should be dismissed.

ACKNOWLEDGMENTS

The Committee acknowledges with appreciation the thorough effort of the GAO in helping to conduct the District-13 investigation and the House Recording Studio under the Chief Administrative Officer for providing assistance with the video recording of the GAO testing conducted in Florida.

APPENDIX A—CHRONOLOGY OF EVENTS

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**U.S. House of Representatives
FL-13 Election Contest
Chronology of Events**

<u>DATE</u>	<u>ACTION</u>
11/20/06	Buchanan certified winner of FL-13 Congressional election by 369 votes
11/20/06	Jennings officially requested FL judge overturn certification in FL state court because of alleged pervasive malfunctioning of touch screen voting machines
12/20/06	Jennings preserves her right to contest the election in the House of Representatives by filing a NOTICE OF CONTEST REGARDING THE ELECTION FOR REPRESENTATIVE IN THE ONE HUNDRED TENTH CONGRESS FROM FLORIDA'S THIRTEENTH CONGRESSIONAL DISTRICT
12/29/07	FL trial court denied Jennings request for access to proprietary information, including the voting machine hardware, software, and source code needed to prove the contestant's central claim of voting machine malfunction
1/3/07	Jennings filed Petition with the FL Court of Appeal to review FL trial court's ruling denying access to proprietary information, including voting machine hardware, software, and source code.
1/4/07	Buchanan Seated In House
1/4/07	Chairwoman Millender-McDonald writes to the FL appellate court expressing concern over the denial of the contestant's access to crucial evidence and reflecting the House's hope for state court resolution and commitment to a fair hearing
1/9/07	Letter from FL appellate court clerk informing Chairwoman Millender-McDonald's 1/4/07 letter will not be presented to appellate court for consideration
1/19/07	Buchanan Files MOTION TO DISMISS ELECTION CONTEST
1/22/07	Chairwoman Millender-McDonald writes to Sarasota County Supervisor of Elections, Kathy Dent, requesting preservation of all election materials
1/26/07	Letter from Dent informing the Committee that Sarasota County expected an election to be held in March and need to deploy 800 of the 1,500 voting machines in order to be able to conduct the election
2/6/07	Chairwoman Millender-McDonald writes to Jennings and Buchanan suspending discovery until further notice
2/7/07	Chairwoman Millender-McDonald writes to Sarasota County Supervisor of Elections, Kathy Dent, agreeing to the county's request to identify and deploy 800 machines for the March '07 elections provided that the County continues to secure all materials and equipment that are currently the subject of the Motion to Compel in the FL court proceedings and any machine meeting additional criteria designated by the Committee
3/23/07	Chairwoman Millender-McDonald establishes a three member ad hoc election panel, two members of the Majority and one member of the Minority, to oversee

matters relating to FL's 13th Congressional District election contest and recommend final disposition to the Committee of that contest. Representative Charlie Gonzalez and Representative Zoe Lofgren are appointed as the Majority members, with Representative Gonzalez serving as Chairman.

- 4/16/07 Ranking Member Ehlers recommends Representative Kevin McCarthy as the Minority member.
- 4/17/07 Status Conference - Counsel to the parties informally brief the panel on the status of FL election contest proceedings.
- 4/22/07 Upon passing of Chairwoman Millender-McDonald, Vice-Chair Brady becomes Acting Chair.
- 4/25/07 Chairman Brady appoints Representative Kevin McCarthy to the Task Force
- 5/2/07 Public Task Force Meeting – The Task Force initiates an investigation of Florida's 13th Congressional District election and authorizes Task Force Chairman Gonzalez to secure the assistance of the Government Accountability Office, which shall be requested to design and propose testing protocols to determine the reliability of the equipment used in the FL-13 election (taking into account recommendations by the contestant and contestee).
- 5/24/07 Representative Robert Brady officially named Chairman of the Committee on House Administration
- 6/7/07 Internal briefing and planning meeting of Task Force and GAO to discuss GAO Engagement Plan
- 6/14/07 Public Task Force Meeting – Task Force approves the GAO Engagement Plan
- 6/15/07 Letter from Task Force Chairman Gonzalez to Jennings and Buchanan seeking comments to the GAO Engagement Plan by 6/22/07
- 6/15/07 Task Force Chairman Gonzalez writes to all interested parties seeking full, prompt, and voluntary cooperation
- 6/18/07 FL Court of Appeal denied Jennings' petition for certiorari that sought review of the FL trial court's order denying access to proprietary information, including the voting machine source code
- 6/22/07 Jennings and Buchanan file official comments to the GAO Engagement Plan with the Committee
- 6/27/07 Letter from Task Force Member Representative Kevin McCarthy to Chairman Gonzalez requesting the Task Force prepare a contingency plan for the FL-13 investigation in the event Jennings concedes the election or withdraws her contest.
- 6/28/07 Letter from Chairman Gonzalez to Mr. McCarthy indicating the Task Force will proceed as planned
- 7/27/07 Internal briefing and planning meeting of Task Force and GAO on work plan progress
- 8/3/07 Public Task Force Meeting – GAO briefing on the status of the Engagement Plan

9/20/07	Internal briefing and planning meeting of Task Force and GAO on Engagement Plan progress
10/2/07	Public Task Force Meeting – GAO presents its findings on the Engagement Plan and recommends additional testing to provide increased assurances that the touch screen voting machines in Sarasota County did not contribute to the undervotes. The Task Force unanimously approves GAO's proposal for further testing of the firmware, ballot, and calibration of the ES&S touch screen voting machines
11/26/07	GAO started the additional testing of voting machines in Sarasota County, Florida
11/26/07	Ms. Jennings withdraws her election challenge in the state courts
12/4/07	GAO completed the additional testing of voting machines in Sarasota County, Florida
2/8/08	Public Task Force Meeting – GAO presents its findings that the voting systems used in Sarasota County did not contribute to the undervote and further testing is not necessary. The Task Force unanimously moved to report to the Committee on House Administration that the election contest in the 13 th District of Florida should be dismissed
2/12/08	Committee on House Administration Meeting – The Committee approved the resolution dismissing the election contest in Florida's 13 th Congressional District. The Committee report and resolution was filed with Clerk of the House of Representatives

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Committee on House Administration Hearings and Actions

Status Conference -- April 17, 2007

To brief Task Force members on the contest proceedings, Chairman Gonzalez held a status conference with counsels from both parties on April 17, 2007. The parties updated the Task Force members on the status of current court proceedings and provided members with their views on the investigation. The counsels also were requested to address the following issues: Whether there were compelling reasons for the Task Force not to proceed with an investigation at this time; if the task force authorized discovery under the Federal Contested Election Act, what discovery did the parties anticipate undertaking; and could the task force rely and to what extent on the tests conducted by Florida state authorities and their experts.

Task Force Meeting -- May 2, 2007

The Task Force held its first public meeting on May 1, 2007. During the meeting, the Task Force unanimously moved to initiate an investigation into Florida's Thirteenth Congressional District election and unanimously authorized Chairman Gonzalez to secure the assistance of the Government Accountability Office (GAO). The Task Force requested that GAO develop a plan to determine the reliability of prior tests and determine if additional testing was needed to establish whether the voting machines contributed to the undervote.

ACTIONS:

Motion One -- Initiate an Investigation

I move that the Task Force initiate an investigation of Florida's 13th Congressional District election (offered by Representative Zoe Lofgren).

Member	Vote
Rep. Gonzalez	Y
Rep. Lofgren	Y
Rep. McCarthy	N

Motion Two -- How to Proceed

I move that the Chairman be authorized and directed to secure the assistance of the Government Accountability Office, which shall be requested to design and propose testing protocols to determine the reliability of the equipment used in the FL-13 election, taking into account recommendations by the contestant and contestee. The Task Force shall approve any testing protocols prior to execution by the GAO. The GAO may procure such expertise and assistance from governmental or non-governmental experts and entities as it deems necessary, and shall report its findings to the task force (offered by Zoe Representative Lofgren).

Member	Vote
Rep. Gonzalez	Y
Rep. Lofgren	Y
Rep. McCarthy	Y

Task Force Meeting – June 14, 2007

The Task Force held a public meeting where the GAO presented their Engagement Plan. GAO testified that they would utilize party pleadings, the state Audit Report, and communicate with the State of Florida, Sarasota County, and ES&S to analyze the voting system procedures and determine whether additional testing was needed. Immediately following the GAO presentation the Task Force members unanimously approved the Engagement Plan.

ACTIONS:

Motion Three – Clarifying Amendment to GAO Engagement Plan

High Level Objective: Did the voting machine malfunction contribute to the large undervote? Ascertain whether additional testing is needed to determine whether voting system malfunction contributed to the undervote (offered by Representative Kevin McCarthy).

****Motion was withdrawn by Representative Kevin McCarthy*

Motion Four – Approve GAO Engagement Plan

I move the approval of the GAO Engagement Plan with a target date of July 27, 2007; and that the Chairman transmit the GAO Engagement Plan to the parties to the contest, and that upon receipt, the parties will have seven days to submit comments to the Committee on House Administration which will transmit such comments forthwith to the GAO; and that the Chairman notify individuals, offices, and entities identified in the GAO Engagement Plan that the Task Force seeks their full, prompt and voluntary cooperation with the GAO (offered by Zoe Lofgren).

Member	Vote
Rep. Gonzalez	Y
Rep. Lofgren	Y
Rep. McCarthy	Y

Task Force Meeting – August 3, 2007

On August 3, 2007 the Task Force held a public meeting to discuss the status of the GAO Engagement Plan. The GAO testified that they are close to completing the identification and examination of the Sarasota County voting systems, SALT source code review, and the election procedures used in Sarasota County. GAO also offered some preliminary observations that Sarasota County used election procedures which contained too small of a sample size to support generalizing the results to the overall population.

ACTION:

Motion Five – GAO District Work Period Request

I move that the Chairman be authorized and directed to consult the Task Force by teleconference or other appropriate means to consider any GAO request received during the district work period and determined by the Chairman to require Task Force concurrence. For the purpose of consultation, as described in this motion, all members of the Task Force must be in simultaneous contact. To preserve our open process, any consultation under this motion will be made open to the public and press through teleconference or web technology in the House Administration hearing room. No final

disposition of the underlying FL-13 election will be made pursuant to this procedure (offered by Zoe Lofgren).

Member	Vote
Rep. Gonzalez	Y
Rep. Lofgren	Y
Rep. McCarthy	Y

Task Force Meeting – October 2, 2007

The Task Force held a public meeting on October 2, 2007 for the GAO to present its report on the Engagement Plan. The GAO testified that further testing could provide increased assurance that the voting systems did not cause the undervotes in Florida's Thirteenth Congressional District. During their analysis GAO found that some of the prior tests and reviews by the State of Florida and Sarasota County provide some assurances that certain components of the voting systems in Sarasota County functioned correctly, but not enough to provide reasonable assurance that the voting systems did not contribute to the undervotes. Following GAO's testimony the Task Force unanimously authorized GAO to conduct further testing on the firmware, ballots, and miscalibration of the iVotronic DRE voting machines in Sarasota County.

ACTION:

Motion Six – Approve GAO's Additional Testing Plans

I move that the task force approve the proposed GAO testing plan and associated protocols as follows: Firmware testing to verify that the firmware in the iVotronic DREs used in Sarasota County matches the certified version; Ballot testing of iVotronic DREs to confirm correct operation; Miscalibration of an iVotronic DRE to understand the effect on the undervote. I move further that the Chairman request that all individuals, offices, and entities whose cooperation is necessary, fully, promptly and voluntarily assist the GAO to enable it to conduct the testing described above (offered by Zoe Lofgren).

Member	Vote
Rep. Gonzalez	Y
Rep. Lofgren	Y
Rep. McCarthy	Y

Task Force Meeting – February 8, 2008

The Task Force held a public meeting on February 8, 2008 for the GAO to present its findings on the additional testing it conducted on the Sarasota County touch screen voting machines. GAO concluded that the voting systems used in Sarasota County did not contribute to the undervote and further testing was not necessary. GAO also acknowledged that ballot design or voter confusion or apathy in the race could have contributed to the 18,000 undervotes. Following the GAO testimony the Task Force unanimously moved to report to the Committee on House Administration that the election contest in the 13th Congressional District of Florida be dismissed.

ACTION:

Motion Seven – Dismissing the Election Contest in the 13th Congressional District of Florida
 I move that the Chairman be authorized and directed to report to the Committee that the Task Force has completed its investigation related to the election of a Representative from the 13th Congressional District of Florida to the House of Representatives, and I move further that the Chairman report to the Committee the Task Force's recommendation that the election contest in the 13th District of Florida be dismissed (offered by Zoe Lofgren).

Member	Vote
Rep. Gonzalez	Y
Rep. Lofgren	Y
Rep. McCarthy	Y

Committee on House Administration Meeting – February 12, 2008

The Committee on House Administration held a meeting on February 12, 2008 to consider the recommendation of the Task Force on the election contest in Florida's 13th Congressional District. During this meeting the Committee unanimously approved the House Resolution to dismiss the election contest.

ACTION:

Motion #1 – Dismissing the Election Contest in the Thirteenth Congressional District of Florida
 Mr. Chairman, I move that the Committee order reported favorably to the House an original resolution, the text of which is before us, to dismiss the election contest in the 13th District of Florida (offered by Representative Charles Gonzalez).

Member	Vote
Rep. Brady	Y
Rep. Lofgren	Y
Rep. Gonzalez	Y
Rep. Capuano	Y
Rep. Susan Davis	Not Present
Rep. Artur Davis	Not Present
Rep. Ehlers	Y
Rep. Lungren	Y
Rep. McCarthy	Y

JUANITA MILLER-MCDONALD, CALIFORNIA
CHAIRWOMAN

Congress of the United States

House of Representatives

COMMITTEE ON HOUSE ADMINISTRATION
1309 Longworth House Office Building
(202) 225-2061

Washington, D.C. 20515-6157

www.house.gov/cha

January 4, 2007

Mr. Jon S. Wheeler
Clerk of the Court
Florida First District Court of Appeal
301 S. Martin Luther King Blvd.
Tallahassee, FL 32399-1850

Re: *Christine Jennings v. Elections Canvassing Commission*, Case No. 1D07-11

Dear Mr. Wheeler:

I am writing in relation to the pending case, *Christine Jennings v. Elections Canvassing Commission*, Case No. 1D07-11, and ask that this letter be filed with the Court in connection with that proceeding.

The House of Representatives has received a Notice of Contest from Christine Jennings, preserving her right to contest in the House, the certified results of Florida's 13TH Congressional District election, as she is now doing under Florida law. The responsibility for evaluating any House contest falls to the House Administration Committee, which I chair. As a result, my Committee is closely following the course of the litigation now underway in Florida.

In contested House elections, the House customarily relies on state legal processes to provide a full and fair airing of contested election issues raised by the parties. This allows states the opportunity to fully discharge their Constitutional responsibility to conduct Federal elections. These state proceedings ordinarily enhance the ability of the House to evaluate the merits of any pending election contest. See *Roudebush v Hartke*, 405 U.S. 15, 92 S.Ct. 804 (1972).

It is therefore of concern that the parties have been unable to agree upon, and that, on December 29TH, the lower court declined to order, the requested access to the hardware and software (including the source code) needed to test the contestant's central claim: voting machine malfunction. Now on appeal to your Court is the question of access to this evidence, which bears decisively on the


prospect of conclusively establishing who was duly elected on November 7th from this Congressional district.

My purpose here is not to express a position about the technical merits of the competing legal arguments in this evidentiary dispute. My purpose is to point out that, in evaluating an election contest in the House, the House is well served in its own deliberations by having before it a complete record. Consequently, Florida law will facilitate the evaluation of the election contest pending before the House to the extent that it provides access to relevant and critical evidence. I am confident that this can be done in a way that accommodates the valid interests of the parties, and resolution of these issues may obviate the need for the House to address them.

This election contest is, of course, a case of national importance, brought before the Court at a time of serious and mounting concern about the reliability of paperless electronic voting equipment. I am aware that the voters of Sarasota County expressed their doubts on November 7th, when they approved a requirement for voter verified paper balloting and mandatory audits.

Against this background, I am particularly concerned that the public, in Florida and nation-wide, have full confidence that the questions raised by this contest are resolved after consideration of all relevant evidence. It is with this public interest in mind, and also with due consideration for the State's and the House's proper performance of their respective constitutional duties, that I respectfully submit these views to the Court for its consideration.

Sincerely,


 Juanita Millender-McDonald
 Chairwoman

Cc: See attached Certificate of Service

DISTRICT COURT OF APPEAL, FIRST DISTRICT
301 S. Martin Luther King, Jr. Blvd.
Tallahassee, Florida 32399-1850
Telephone No. (850) 488-6151

January 10, 2007

CASE NO.: 1D07-11
L.T. No. : 2006 CA 2973

Christine Jennings, Et Al v. Elections Canvassing Commission Etc., Et Al.

Appellant / Petitioner(s), Appellee / Respondent(s).

BY ORDER OF THE COURT:

The correspondence of January 4, 2007, from the United States House of Representatives has not been docketed in this cause and will not be considered by the panel of judges which determines the merits of this proceeding. Accordingly, respondent's motion to strike filed January 5, 2007, is denied as moot.

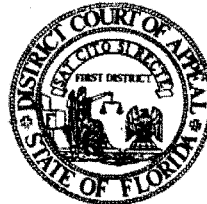
I HEREBY CERTIFY that the foregoing is (a true copy of) the original court order.

Served:

Matthew J. Zimmerman	Charles Howell	Aziza Naa-Kaa Botchway
Lowell Finley	Elliott M. Minberg	Kendall Coffey
Mark Herron	Zeina N. Salam	Cindy A. Cohen
Muslima Lewis	Rebecca Harrison Steele	Randall C. Marshall
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Jessica Ring Amunson	Reginald J. Mitchell	Allen C. Winsor
Glenn T. Burhans, Jr.	Miguel De Garza	Peter Antonacci
Hon. William L. Gary, Judge	Frederick J. Eibrecht	Ronald A. Labasky
Hayden R. Dempsey	Jeffrey L. Frehn	Harry O. Thomas

anti

Jon S. Wheeler
JON S. WHEELER, CLERK



JUANITA MILLENDER-MCDONALD, CALIFORNIA
CHAIRWOMAN

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House of Representatives

COMMITTEE ON HOUSE ADMINISTRATION
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Washington, D.C. 20515-6137

www.house.gov/cha

January 22, 2006

Kathy Dent
Supervisor of Elections
Sarasota County Florida
101 S Washington Boulevard
Sarasota, FL 34236

Dear Ms. Dent:

Under Article I, Section 5 of the Constitution of the United States, the U.S. House of Representatives shall be the judge of the elections, returns and qualifications of its members. Pursuant thereto, the House of Representatives has directed the Committee on House Administration to review the election in the 13th Congressional District of Florida.

In conjunction with its review, the Committee asks that you protect and keep safe all originals and copies of books, records, correspondence, memoranda, papers, equipment, and documents in your actual or constructive possession, custody or control relating to the general election held on November 7, 2006, including but not limited to all paper and electronic ballots, certifications, poll books, logs, tally sheets, machines, and software.

The Committee understands that Florida Election Code 101.545 currently requires that you preserve election materials for a minimum of 22 months after certification of a federal election. If your understanding is otherwise, or if this requirement would result in hardship, please notify the Committee. Any questions regarding the preservation of this material can be directed to Charlie Howell, Chief Counsel of the Committee at (202) 225-2061.

Your assistance and cooperation is earnestly solicited.

Best regards,



JUANITA MILLENDER-MCDONALD

FROM young van assenderp

(FRI) JAN 26 2007 14:03/ST. 14:03/No. 7500000321 P 2

YOUNG VAN ASSENDERP P.A.

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 ———
 GEORGE ANN C. BRACKO
 EXECUTIVE DIRECTOR

January 26, 2007

VIA FAX #202/225-6009
AND U.S. MAIL

Charles Howell
 General Counsel
 Congress of the United States
 House of Representatives
 Committee on House Administration
 1309 Longworth House Office Building
 Washington, D.C. 20515

Re: Jennings v. Elections Canvassing Commission,
 Case No. 1D07-11

Dear Charlie:

In response to the Committee on House Administration's letter of January 22, 2007 and our telephone conversation yesterday, enclosed is Dent's Notice to Court and Motion for Authorization, which I filed in the Leon County Circuit Court concerning the need of the Sarasota County Supervisor of Elections office to use voting equipment in the Sarasota County election in March 2007. As reflected in that Motion and correspondence, Sarasota County will need approximately 800 machines to carry out that election. In that effort, we have discussed this matter with the attorneys for Christine Jennings and also advised the attorneys for the other Plaintiffs in this case, of those negotiations and requested their input.

As you will see from the emails dated January 18, 2007, Plaintiff Jennings requested that certain equipment be secured so that if they prevail in their Certiorari to the Florida First

FROM young van assenderp

(FRI) JAN 26 2007 14:04/ST. 14:03/No. 7500000321 P 3

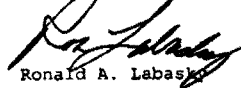
Charles Howell
January 26, 2007
Page 2

District Court of Appeal, and obtain access to the voting equipment and the source code, their tests can be undertaken. My letter of January 22, 2007 to Mark Herron confirms that Sarasota County can meet those requests. The financial issues have been resolved. At this point, I have not received a specific response to our January 23, 2007 letter to the attorneys for the other Plaintiffs in this case. However, on Wednesday I was advised by Rebecca Steele that they had suggestions concerning voting equipment that they would desire to see retained for tests, assuming court access is granted.

In summary, Sarasota County will need approximately 800 voting machines for the upcoming elections. There were approximately 1,600 voting machines used in the general election in November 2007. The equipment that is not used in the March election, will be secured pending the various directions of the Court. Any of the items that were the specific subject of the motions to compel by the Plaintiffs, which is now before the appeals court, will be secured. The additional items requested by Christine Jennings will be retained pending a determination of the Court of whether this equipment will be accessible to the Plaintiffs.

Thank you for your assistance in this matter. Please contact me at your convenience or if there are additional questions.

Sincerely,



Ronald A. Labasky

Enclosures
cc: Kathy Dent

FROM young van assenderp

(FRI) JAN 26 2007 14:04/ST. 14:03/No. 7500000321 P 4

YOUNG VAN ASSENDERP, P.A.

ATTORNEYS AT LAW

ATTORNEYS:

YASHA O. BUFORD
 DAVID S. DEE
 RONALD A. LABASKY
 JOHN T. LAYNE, III
 PHILIP S. PARSONS
 TIMOTHY R. QUALLS
 KENYA VAN ASSENDERP
 ROBERT SCHEFFEL WRIGHT
 ROY C. YOUNG

GALLIE'S MALL
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 SUITE 200
 POST OFFICE BOX 1833
 (ZIP 32302-1833)
 TALLAHASSEE, FLORIDA 32301

TELEPHONE: (850) 222-7206
 TELECOM: (850) 551-9834

OF COUNSEL ATTORNEYS:

DANIEL M. COE
 DAVID B. ERWIN
 JOSEPH W. LANDERS, JR.

GEORGE ANN C. BRACHO
 EXECUTIVE DIRECTOR

January 22, 2007

VIA FAX #558-0659
AND U.S. MAIL

Mark Herron
 Messer, Caparello & Self, P.A.
 2618 Centennial Place
 Tallahassee, Florida 32308

Re: 2007 Local Elections and Evidence Preservation

Dear Mark:

As a follow up to your email of last Thursday, which is attached, I believe that the Sarasota County Supervisor of Elections office can meet the request that you stated and/or the segregation of equipment. Several of the steps which you request to be taken will cause expense to the citizens of Sarasota and we believe that Christine Jennings should be prepared to compensate Sarasota County for the additional costs, which will be required to meet her demands. See the respective costs in the items below. With respect to each paragraph, we have the following comments:

1. The discovery request that was denied by the Circuit Court relates to a limited number of voting machines and other items, including the source code, which Sarasota County SOE does not have. Those particular machines mentioned in the Request to Produce, which was denied, will be segregated.

2. Sarasota County will use approximately 800 machines in the County elections. The remaining voting machines will not be altered or changed in any fashion.

FROM young van assenderp

(FRI) JAN 26 2007 14:04/ST. 14:03/No. 7500000321 P 5

Mark Herron
January 22, 2007
Page 2

3. Sarasota County will attempt to segregate those voting machines which had an undervote of 20% or higher in the November 2006 election.

4. This appears to be workable.

5. In order to accomplish this request, Sarasota County will be required to buy new compact flash cards, which will cost approximately \$11,200.00. We believe Plaintiffs should pay for these if all flash cards are replaced.

6. Sarasota County will use approximately 800 machines in the County elections. The remaining voting machines will not be altered or changed in any fashion.

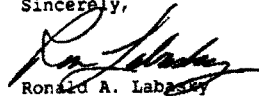
7. The hard drives on the computers used to tabulate votes will be replaced with the old ones maintained. This will cost \$382.45, plus software of \$1,000.00.

8. The twelve qualification PEBs will be maintained in an unaltered condition.

Hopefully, the foregoing can be resolved quickly and I would suggest we advise the other parties, particularly the other Plaintiff parties and prepare a stipulation for submission to Judge Gary.

Please contact me at your earliest convenience.

Sincerely,



Ronald A. Laback

Attachment
cc: Sam Hirsch

FROM young van assenderp

(FRI) JAN 26 2007 14:04/ST. 14:03/No. 7500000321 P 8

Page 1 of 2

Nanci Watkins - 2007 local elections and evidence preservation

From: "Hirsch, Sam" [REDACTED]
 To: [REDACTED]
 Date: 1/18/2007 5:36 PM
 Subject: 2007 local elections and evidence preservation
 CC: [REDACTED]

Dear Ron,

Mark mentioned that your client will soon begin preparations for this year's local elections and that you therefore wanted to discuss how best to move forward with that process given the election contests that are currently pending.

First, we very much appreciate your contacting us about this important issue.

Second, we've come up with some basic principles (listed below) that make sense to us. Please take a look at them, and let us know what you think.

We look forward to reaching agreement on this issue in a way that prevents the needless spoliation or destruction of evidence and at the same time allows your client to administer the 2007 local elections properly and efficiently under these circumstances.

I will be in and out of the office tomorrow, but should be reachable via e-mail or phone for much of the day, as well as on Monday.

Thanks,

Sam

cc: Mark

 PRINCIPLES:

1. The County should preserve, in an unaltered condition, all items that are the subject of the discovery requests that were denied by the Circuit Court for Florida's Second Judicial Circuit on December 29, 2006 (a ruling that is now pending review by Florida's First District Court of Appeal).
2. The County should preserve, in an unaltered condition, all parts of the IVotronic system that need not be altered in order to prepare or conduct the 2007 local elections. We understand that these parts of the IVotronic system would include, among other things, roughly half of the County's approximately 1,500 IVotronic machines.
3. The County should not deploy in any 2007 election any IVotronic machine that recorded a congressional undervote of 20.0% or higher in the November 2006 election.
4. The County should not deploy in any 2007 election any IVotronic PEB from a precinct or early-voting polling station where the congressional undervote rate was 20.0% or higher in the November 2006 election.
5. The County should not deploy in any 2007 election any compact flash card used in an IVotronic machine in the November 2006 election.
6. The County should not break the seal on any IVotronic machine or other IVotronic equipment except as needed to conduct the 2007 local elections. Among other things, the County should not "clear and test," or

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FROM young van assenderp


(FRI) JAN 26 2007 14:06/ST. 14:03/No. 7500000321 P 7

Page 2 of 2

recalibrate the touch-screens of, any IVotronic machine that need not be deployed in any 2007 local election.

7. The County should create complete back-up copies of the entire hard drive(s) on the computer(s) used to tabulate the votes in the November 2006 election and the computer(s) used to prepare PEBs and/or IVotronic machines for the November 2006 election. Alternatively, the County should replace these hard drives and preserve them in an unaltered condition.

8. The County should preserve, in an unaltered condition, PEBs and memory cards used in configuring and installing the ballot definitions or any other county-specific or election-specific files or other data for the November 2006 election.

Sam Hirsch
Jenner & Block LLP
601 Thirteenth Street, N.W.
Suite 1200 South
Washington DC 20005-3823
Tel (202) 837-6397
Fax (202) 661-4900

www.jenner.com

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FROM young van assenderp

(FRI) JAN 26 2007 14:05/ST. 14:03/No. 7500000321 P 8

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative
in Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs.

CASE NO. 2006 CA 002973

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, et al.,

Defendants.

ELLEN FEDDER, et al.,

Plaintiffs,

vs.

CASE NO. 2006 CA 002996
(Consolidated)

TOM GALLAGHER, et al.,

Defendants.

COPY
FILED
CIRCUIT CIVIL DIV.
07 JAN 19 PM 4:37
CLERK OF COURT
LEON COUNTY, FLORIDA

DEFENDANT DENT'S NOTICE TO COURT AND
MOTION FOR AUTHORIZATION

COMES NOW, by and through undersigned counsel, Defendant
Kathy Dent as Supervisor of Elections in Sarasota County,
Florida ("Dent"), advises the Court of the necessary actions to
be taken in Sarasota County, which may relate to this lawsuit.
With respect thereto, the Defendant states as follows:

1. Defendant Dent as Supervisor of Elections in Sarasota County, has been named as a party in this lawsuit, which involves various Plaintiffs, principally Christine Jennings who was the unsuccessful candidate in the November 7, 2006 General Election for the 13th Congressional District.

2. On or about November 20, 2006, Plaintiff Jennings filed Plaintiff's Request for Production of Documents and Inspection of Tangible Things. In that request, the Plaintiff requested "temporary access to eight iVotronic machines that generated particularly high undervote rates in the recent congressional election in Sarasota County, including at least one machine used on election day in each of six specified precincts (31, 44, 74, 105, 117, 118) and at least one high undervote machine used in early voting." (See paragraph 13, Plaintiff's Request). Plaintiff also requested permission to physically open and inspect the internal components of one iVotronic machine and one PEB. In addition, the Plaintiff requested the source code to the voting system.

3. Since that request, the Defendant has not only responded to the Request, but this Court held hearings pursuant to motions filed by Defendant Elections Systems & Software. The result of the hearings was this Court denying access to the equipment previously mentioned, as well as the source code.

4. Pursuant to that Order, the Plaintiffs in this case have filed a Petition for Writ of Certiorari with the First District Court of Appeal, which is pending at this time.

5. On March 13, 2007, Sarasota County will have a countywide election, which involves the City of Sarasota elections, a Special Election in Longboat Key, Florida, the Holiday Park Special Taxing District election, and a probable annexation election proposed by Sarasota County Commissioners.

6. In order to provide voting equipment for this election on March 13, 2007, Defendant Dent needs to prepare the voting machines that are necessary for the election. At this point, her staff is waiting to clear the machines, used in the November 7, 2006 election, in order to prepare them and place the ballots on the machines in Sarasota County for the March election.

7. This election in Sarasota County will require approximately 800 machines of the 1512 total machines used in the Sarasota County 2006 General Election.

8. All information, data and results of the November 7, 2006 election in Sarasota County, including the election for United States Representative in the 13th Congressional District, have been reduced to storage media as required by the Florida Statutes or rules of the Florida Department of State, Record Retention Schedule for State and Local Government Agencies. Therefore, all of the information from the November 7, 2006

election, on the respective voting machines that will be used in the upcoming election, has been preserved as provided for under Section 101.545, Florida Statutes, other provisions of the Florida Election Code, as well as federal election record requirements.

9. While the Supervisor of Elections and Defendant in this case has taken the actions necessary under state law to preserve the election records involved, she feels it appropriate to come to the Court to advise the Court of the election requiring use of and the clearing of the machines.

10. Plaintiffs' Fedder, et al., previously filed a Motion for Entry of Anti-Spoliation Order in this matter, which has not been heard.

11. The necessary actions to prepare the voting machines must be initiated by January 26, 2007, in order to have sufficient time to prepare for and carry out the election as scheduled in Sarasota County on March 13, 2007.


12. In addition, the Sarasota County government has indicated that it intends to purchase a new voting system for Sarasota County. Based upon that decision, Supervisor Dent has entered into negotiations to sell the voting equipment that is at issue in this proceeding, thereby saving the taxpayers and citizens of Sarasota County significant public funds, provided the sale could be consummated in the immediate future.

Therefore, the Defendant Dent would further request this Court to consider now, or in the immediate future, authorizing all the equipment involved to be sold, other than the specific equipment that has been requested by the Plaintiff Christine Jennings for testing, if such testing is ever authorized.

13. Defendant Dent has contacted attorneys for Plaintiff Jennings concerning this motion and they have provided a response, which Defendant is evaluating, and which hopefully will lead to a suggested resolution for the Court.

WHEREFORE, Defendant Dent requests the Court to enter an Order authorizing the Supervisor of Elections to utilize the necessary voting equipment and take the other actions necessary to hold the Sarasota County elections on March 13, 2007.

Respectfully submitted this 19th day of January, 2007.


Ronald A. Labasky, Esq.
Florida Bar No. 206326
YOUNG VAN ASSENDERP, P.A.
Gallie's Hall
225 South Adams Street
Suite 200
P.O. Box 1833 (32302-1833)
Tallahassee, Florida 32301
Phone: 850/222-7206
Fax: 850/561-6834
Attorney for Defendant
Email: rlabasky@yvvlaw.net

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by Electronic Transmission or Facsimile and U.S. Mail on this 19th day of January, 2007, to:

Kendall Coffey
Coffey & Wright, L.L.P.
2665 South Bayshore Dr.
PH-2, Grand Bay Plaza
Miami, Florida 33133
Telephone: 305/857-9797
Facsimile: 305/859-9919
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Mark Herron
Messer, Caparello & Self, P.A.
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Judith E. Schaeffer
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Foundation
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Telephone: 202/467-4999
Facsimile: 202/293-2672
Attorneys for Fedder Plaintiffs

FROM young van assenderp

(FRI) JAN 28 2007 14:05/ST. 14:03/No. 7500000321 P 14

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 Randall C. Marshall, Legal Dir.
 Aziza Naa-Kaa Botchway
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Attorney for ES&S


 ATTORNEY

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OFFICE OF THE CLERK OF THE HOUSE OF REPRESENTATIVES
CHARLOTTE, NORTH CAROLINA

Congress of the United States

House of Representatives

COMMITTEE ON HOUSE ADMINISTRATION
1309 Longworth House Office Building
(202) 225-2061

Washington, D.C. 20515-6157

www.house.gov/clia

OFFICE OF THE CLERK OF THE HOUSE OF REPRESENTATIVES
WASHINGTON, D.C.

February 7, 2007

Mr. Ronald A. Labasky, Esquire
Young Van Assenderp, P.A.
225 South Adams Street
Tallahassee, FL 32301

Dear Mr. Labasky:

The Committee is in receipt of your letter of January 26, 2007, informing the Committee that Sarasota County will be holding an election in March and will need to deploy approximately 800 of its voting machines in order to be able to conduct the election. By letter of January 22, 2007, the Committee notified Ms. Dent as the Sarasota County Supervisor of Elections that an election contest was pending in the U.S. House of Representatives relating to November, 2006 election of the Representative from the 13th District of Florida to the U.S. House of Representatives. The Committee's letter instructed Ms. Dent to take whatever steps were necessary to secure any and all election materials and equipment that were in the County's possession that would be relevant to the Committee's consideration of the contest. You have informed the Committee that you have taken those measures. You are now requesting that the County be allowed to identify and deploy 800 of approximately 1600 machines that were used in the November election.

You have assured the Committee that the County is confident that in selecting voting machines for use in the March election that it can do so without compromising any evidence currently sought by the contestant in the pending Florida contest or any evidence that the Committee would need to fully and properly discharge its Constitutional responsibility. To that end the County has and will continue to secure all materials and equipment that are currently the subject of the motion to compel in the Florida proceedings.

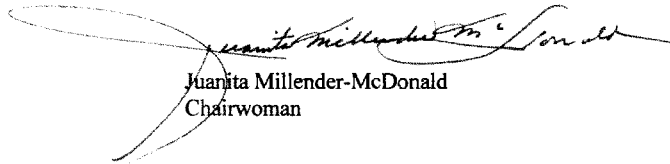
In addition to the evidence which is the subject of the Florida proceeding,

the Committee requests that any machine meeting the following criteria be secured and not used in the March election:

- Machines with an undervote in the Congressional election at or above 15%.
- At least twenty machines with an undervote under 3% on which more than 30 votes were cast in the Congressional race.
- All machines on which fewer than 15 votes were cast in the Congressional race.
- Any machine that was identified in zone tech log sheets, incident report forms, or specifically identified in any other report to the Supervisor of Elections as having problems or withheld or withdrawn from use because of a potential problem.
- Any machine that the State Division of Elections used in the December 1, 2006 parallel testing.
- Any machine that the Sarasota County Supervisor of Elections' office used in its October Logic and Accuracy testing.

If for any reason, the County believes that it cannot secure the machines identified by these criteria, the Committee asks that you immediately notify it so that the Committee may find a means, if possible, of accommodating the County's legitimate interests without depriving the Committee of evidence that may be necessary for the House of Representatives to resolve confidently and fairly the contest before it. The Committee appreciates the County's continuing cooperation in this matter.

Very truly yours,



Juanita Millender-McDonald
Chairwoman

JUANITA MILLENDER-MCDONALD, CALIFORNIA
CHAIRWOMAN

Congress of the United States

House of Representatives

COMMITTEE ON HOUSE ADMINISTRATION
1309 Longworth House Office Building
(202) 225-2061

Washington, D.C. 20515-6157

www.house.gov/cha

VERNON J. PHILLIPS, MICHIGAN
RANKING MEMBER

February 16, 2007

Mr. Ronald A. Labasky, Esquire
Young Van Assenderp, P.A.
225 South Adams Street
Tallahassee, FL 32301


Dear Mr. Labasky:

In furtherance of my letter of February 7, 2007 requesting Sarasota County Supervisor of Elections Ms. Dent to secure any machine falling within criteria set out by the Committee from being used in the March election, Ms. Dent subsequently notified the Committee that Sarasota County is still in need of 80 additional machines in order to be able to conduct the election.

The Committee is willing to amend its original request. As such, the first bullet should read as follows: "Machines with an undervote in the Congressional election at or above 16.25%." Please confirm which voting machines by iVotronic number will be captured under the new criteria.

The Committee remains committed to accommodating the County's immediate need to administer the March election and appreciates the County's continuing cooperation in securing evidence that may be necessary for the House of Representatives to resolve confidently and fairly the contest before it.

Very truly yours,


Juanita Millender-McDonald
Chairwoman

JUANITA MILLENDER-MCDONALD, CALIFORNIA
CHAIRWOMAN

Congress of the United States

House of Representatives

COMMITTEE ON HOUSE ADMINISTRATION
1309 Longworth House Office Building
(202) 225-2061

Washington, D.C. 20515-6157
www.house.gov/cha

VERNON J. EHRLER, MICHIGAN
RANKING MEMBER

February 6, 2007

Ms. Christine Jennings, Contestant
PO Box 49135
Sarasota, FL 34230

Hon. Vern Buchanan, Contestee
U.S. House of Representatives
1516 Longworth House Office Building
Washington, DC 20515

Contested Election: *Jennings v Buchanan (FL-13)*

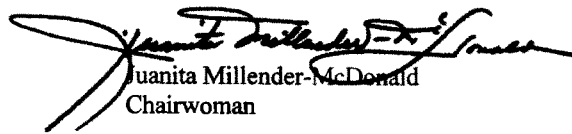
Dear Ms. Jennings and Rep. Buchanan:

On December 20, 2006, Contestant, Ms. Jennings, filed a *NOTICE OF CONTEST REGARDING THE ELECTION FOR REPRESENTATIVE IN THE ONE HUNDRED TENTH CONGRESS FROM FLORIDA'S THIRTEENTH CONGRESSIONAL DISTRICT* with the Office of the Clerk of the U.S. House of Representatives. On January 19, 2007, Contestee, Rep. Buchanan, filed a *MOTION TO DISMISS ELECTION CONTEST* with the Office of the Clerk of the U.S. House of Representatives. The matter has been referred to the Committee on House Administration for consideration.

Under the Federal Contested Elections Act ("FCEA"), the Contestee may file a Motion to Dismiss in lieu of an answer. If the motion is denied, or if the Committee postpones its disposition until the hearing on the merits, Contestee's Answer shall be served within ten days of notice of the denial or postponement or at such time as the Committee sets. Contestant's discovery right does not begin until service of Contestee's answer.

At this time, the Committee is not prepared to act on Contestee's Motion to Dismiss, nor is it prepared to postpone its disposition until the hearing on the merits. The Committee is considering the Motion, and will notify both Contestant and Contestee when the Committee has reached a decision on how it intends to proceed. Until notice is given, neither the filing of Contestee's Answer nor the commencement of compelled discovery by Contestant is permitted under the FCEA.

Very truly yours,


 Juanita Millender-McDonald
 Chairwoman

CC:

Counsel for Christine Jennings:

Mark Herron
 Messer Caparello, & Self, PA
 2618 Centennial Place
 Tallahassee, FL 32308

Kendall Coffey
 Coffey & Wright
 2665 South Bayshore Drive
 PH-2, Grand Bay Plaza
 Miami, FL 33133

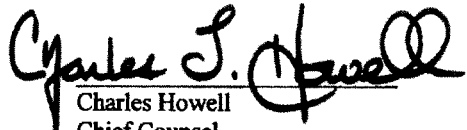
Sam Hirsch
 Jenner & Block
 601 Thirteenth Street, NW
 Suite 1200 South
 Washington, DC 20006

Counsel for Rep. Vern Buchanan:

Glenn T. Burhans, Jr.
 Hayden R. Dempsey
 Seann M. Frazier
 Greenberg Traurig, P.A.
 101 East College Avenue
 Tallahassee, FL 32301

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by United States Mail, this 6th day of February, 2007, to the parties and all counsel of record as listed therein.

A handwritten signature in black ink, reading "Charles J. Howell". The signature is written in a cursive style with a large, stylized "H" and "W".

Charles Howell
Chief Counsel
Committee on House Administration
1309 Longworth House Office Building
Washington, D.C. 20515
Telephone: (202) 225-2061

Congress of the United States

Washington, DC 20515

March 15, 2007

The Honorable Juanita Millender-McDonald
Chairwoman
House Administration Committee
1309 Longworth House Office Building
Washington DC 20515

The Honorable Vernon Ehlers
Ranking Republican
House Administration Committee
1313 Longworth House Office Building
Washington, DC 20515

Dear Chairwoman Millender-McDonald and Representative Ehlers:

We write with deep concern regarding recent press accounts in the *Sarasota Herald-Tribune* indicating that the potential for voting irregularities during the 2006 election for Representative in Congress from Florida's 13th District was known long before the November election, yet officials from the State of Florida and the Sarasota County Supervisor of Elections' Office took no preventive measures.

According to this press account, Election Systems & Software, Inc. (ES&S), the manufacturer of the touch-screen voting equipment in Sarasota County, notified the County Supervisor of Elections, as early as August 15, 2006, that calibration "issues" existed with the voting machines. However, the news report continues, even after ES&S acknowledged problems with the machines, the appropriate software patch was never applied to the machines because Florida election officials determined that the immediacy of the election date did not provide sufficient time to make such updates. According to the report, Florida election officials made this decision despite ES&S' belief that the task needed to be, and could be, completed before the November 2006 election.

That these revelations are coming to light now, through press reports, suggests that the potential for fraud in this election was real, that it was known by the responsible officials and that these officials did nothing about it. Further, that these reports came to light through press reports strongly suggests that this investigation is far from complete.

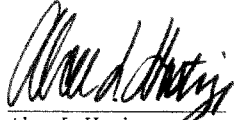
As you know, this particular congressional election is currently being contested under the Federal Contested Elections Act (2 USC 381-396) because Sarasota County's election returns indicated nearly 18,000 blank ballots, or undervotes, on the ES&S system. As questions about the integrity of this election continue to mount, it becomes all the more important for the House of Representatives to exercise its constitutional responsibility to resolve this election contest.

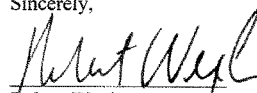
Therefore, we request the immediate formation of an official House task force to review this election pursuant to the Federal Contested Elections Act. We further request that the task force take prompt steps to ensure a full and fair investigation into the Sarasota County voting machines' hardware (including the faulty touch-screens), software, and source code. The voters of Florida — and indeed the people of this entire Nation — deserve nothing less.

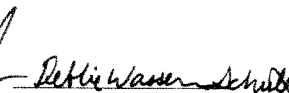
We all know that the House of Representatives has the responsibility to ensure that the elections of its Members — Republican or Democrat — are valid, legitimate and honest. We must do everything in our power to restore the confidence of voters in Florida's 13th Congressional District and throughout our State. Reviewing last November's election in the 13th District is the first step in this critical process.

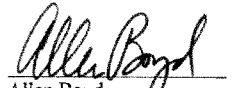
Thank you for your consideration of our request. We look forward to your expeditious response and welcome the opportunity to discuss this with you further.

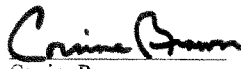
Sincerely,

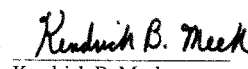

Alcee L. Hastings
Member of Congress


Robert Wexler
Member of Congress

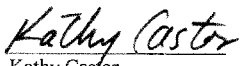

Debbie Wasserman Schultz
Member of Congress

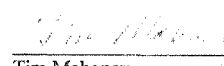

Allen Boyd
Member of Congress


Corrine Brown
Member of Congress


Kendrick B. Meek
Member of Congress


Ron Klein
Member of Congress


Kathy Castor
Member of Congress


Tim Mahoney
Member of Congress

CC: The Honorable Nancy Pelosi, Speaker of the House of Representatives
The Honorable Steny Hoyer, Majority Leader, House of Representatives
The Honorable John Boehner, Minority Leader, House of Representatives

U.S. House of Representatives
COMMITTEE ON HOUSE ADMINISTRATION
1309 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515

March 16, 2007

The Honorable Alcee Hastings
The Honorable Robert Wexler
The Honorable Debbie Wasserman Schultz
The Honorable Tim Mahoney
The Honorable Ron Klein
U.S. House of Representatives
Washington, D.C. 20515

The Honorable Corrine Brown
The Honorable Kendrick Meek
The Honorable Kathy Castor
The Honorable Allen Boyd


Dear Colleagues:

Thank you for your letter dated March 15, 2007, passing on your thoughts on the election contest filed with the Committee in regard to our colleague, Rep. Buchanan, and Christine Jennings. I can assure you that I have been following this matter closely and am very familiar with the issue of voting machine functioning and integrity.

Several parties have seized upon this notification sent by ES&S to Florida election officials about a screen refresh delay as reason to, once again, raise alarmist claims. However, it appears that the independent study of the machines recently conducted by a team of renowned computer scientists examined this issue and concluded that it was of no consequence to the outcome and integrity of the election.

As you know, Ms. Jennings has filed a lawsuit in the State of Florida relative to this election and that lawsuit is proceeding apace. While your letter requests the immediate convening of a Committee task force to review the contest filed here in the House, it has been the practice of this Committee and is the belief of the current Committee's Majority and the Minority that state remedies need to be fully pursued by complainants before this Committee takes up a contest for review. I have no reason to believe that we should diverge from this standard in this case. Thank you again for your interest.

Sincerely,



Vernon J. Ehlers
Ranking Republican

cc: The Honorable Nancy Pelosi, Speaker
The Honorable John Boehner, Republican Leader
The Honorable Steny Hoyer, Majority Leader
The Honorable Juanita Millender-McDonald, Chairwoman
Florida House Delegation

**CREATION OF HOUSE ADMINISTRATION
COMMITTEE TASK FORCE ON THE
ELECTION CONTEST IN FLORIDA'S 13TH
DISTRICT**

In accordance with the Democratic Caucus rules and the proposed rules of the Committee, and without objection, I am announcing my intention to appoint a three-Member task force of the Committee to address issues relating to the election contest filed in the 13th District of Florida by contestant Christine Jennings against contestant Vern Buchanan.

The task force will consist of two Democrats and one Republican and will be chaired by Rep. Gonzalez.

JUANITA MILLENDER-MCDONALD, CALIFORNIA
CHAIRWOMAN

Congress of the United States

House of Representatives

COMMITTEE ON HOUSE ADMINISTRATION
1309 Longworth House Office Building
(202) 225-2061

Washington, D.C. 20515-6157

www.house.gov/cha

VERNON J. EHLERS, MICHIGAN
RANKING MEMBER

March 22, 2007

Hon. Kevin McCarthy
1523 Longworth House Office Building
Washington, D.C.

Dear Representative McCarthy:

Pursuant to Committee Rule 16(b) and consistent with past practice, I hereby establish a three-member Task Force, comprised of two members of the Majority and one member of the Minority, to oversee matters related to a letter recently sent by Electronic Systems and Software, Inc. (ES&S) on the malfunctioning of their voting machines during the elections of November 2006 and other matters relating to Florida's 13th Congressional District election contest. The task force will recommend final disposition to the Committee of the contest.

The following two Democratic members are hereby appointed to the Task Force: Representative Charlie Gonzalez, and Representative Zoe Lofgren, with Representative Gonzalez serving as Chairman.

I have asked Ranking Member Ehlers for a designee from the Minority party.

Regards,



Juanita Millender-McDonald
Chairwoman

JUANITA MILLENDER-MCDONALD, CALIFORNIA
CHAIRWOMAN

Congress of the United States

House of Representatives

COMMITTEE ON HOUSE ADMINISTRATION
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(202) 225-2061

Washington, D.C. 20515-6157
www.house.gov/cha

VERNON J. EHLERS, MICHIGAN
RANKING MEMBER

March 22, 2007

Hon. Vernon J. Ehlers
2182 Rayburn House Office Building
Washington, D.C.

Dear Representative Ehlers:

Pursuant to Committee Rule 16(b) and consistent with past practice, I hereby establish a three-member Task Force, comprised of two members of the Majority and one member of the Minority, to oversee matters related to a letter recently sent by Electronic Systems and Software, Inc. (ES&S) on the malfunctioning of their voting machines during the elections of November 2006 and other matters relating to Florida's 13th Congressional District election contest. The task force will recommend final disposition to the Committee of the contest.

The following two Democratic members are hereby appointed to the Task Force: Representative Charlie Gonzalez, and Representative Zoe Lofgren, with Representative Gonzalez serving as Chairman.

I have asked Ranking Member Ehlers for a designee from the Minority party.

Regards,



Juanita Millender-McDonald
Chairwoman

JEANITA MILLENDER-MCDONALD, CALIFORNIA
CHAIRWOMAN

Congress of the United States

House of Representatives

COMMITTEE ON HOUSE ADMINISTRATION
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(202) 225-2061

Washington, D.C. 20515-6157
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VERNON J. EHLERS, MICHIGAN
RANKING MEMBER

March 22, 2007

Hon. Daniel E. Lungren
2448 Rayburn House Office Building
Washington, D.C. 20515-0503


Dear Representative Lungren:

Pursuant to Committee Rule 16(b) and consistent with past practice, I hereby establish a three-member Task Force, comprised of two members of the Majority and one member of the Minority, to oversee matters related to a letter recently sent by Electronic Systems and Software, Inc. (ES&S) on the malfunctioning of their voting machines during the elections of November 2006 and other matters relating to Florida's 13th Congressional District election contest. The task force will recommend final disposition to the Committee of the contest.

The following two Democratic members are hereby appointed to the Task Force: Representative Charlie Gonzalez, and Representative Zoe Lofgren, with Representative Gonzalez serving as Chairman.

I have asked Ranking Member Ehlers for a designee from the Minority party.

Regards,


Jeanita Millender-McDonald
Chairwoman

Task Force Formed to Investigate Florida 13th Election

By [Rachel Kapochunas](#) | 4:55 PM, Mar. 23, 2007 | [Email This Article](#)

Nearly five months after Florida Republican Vern Buchanan narrowly defeated Democrat Christine Jennings in the state's 13th District, a congressional committee has organized a task force to investigate the controversial election.

California Democratic Rep. Juanita Millender-McDonald, chairwoman of the House Administration Committee, on Thursday announced the formation of the task force, which she said was needed to investigate "possible voting rights violations" in Florida's 13th, where Buchanan prevailed by 369 votes.

Bandle McQueen, Millender-McDonald's chief of staff, told CQPolitics.com on Friday that Millender-McDonald formed the task force after an August 2006 letter surfaced last week in which Electronic Systems & Software Inc. (ES&S) — the company that manufactured the electronic voting machines that were used in the Florida 13 election — told election officials that the voting screens exhibited slow response times during testing.

ES&S said in the letter that the delays would not affect the "integrity or reliability" of the election — but the company nonetheless recommended machine updates and suggested poll workers and voters be apprised of the slow response time.

But Millender-McDonald's committee said in a statement Thursday that "nothing was done nor were poll workers informed."

Jennings and her political allies have long maintained that malfunctions of the electronic voting machines in Sarasota County — the dominant jurisdiction in the southwest Florida district — resulted in more than 18,000 "undervotes," or ballots on which votes were cast for other contests but not for the House race, and thus cost her the election because Jennings defeated Buchanan in Sarasota County.

Millender-McDonald said the task force will "review and raise questions such as, 'What went wrong, how long before the election did state and county officials know of this malfunction, and why were safeguards not taken by state and county officials.'"

Rep. Charlie Gonzales, D-Tex., will chair the three-member task force, which will also include Zoe Lofgren, D-Calif., and a Republican designated by Michigan Rep. Vernon J. Ehlers, the ranking Republican on the House Administration Committee.

Jennings said in a statement Thursday that she was "pleased" that the task force had been organized.

Jennings and voting rights groups filed lawsuits in Florida courts that are pending. Jennings last December formally contested the election in the House of Representatives.

Salley Collins, a spokeswoman for Ehlers, told CQPolitics.com on Friday that the House Administration panel should defer to the pending legal action in the Florida courts.

"We strongly believe that we shouldn't even be having hearings or dealing with any of the issues surrounding the contest until it's had a chance to play out in Florida," Collins said.

Collins said that Republicans will "hold off" on appointing a GOP member to the task force until Republicans receive clarification from Millender-McDonald on the task force's agenda.

Gonzales told CQPolitics.com on Friday that Democrats recognize the role of the courts but said that "nevertheless, there's a role for Congress reflected in the Constitution of the United States" regarding contested elections.

McQueen said that the legal system could no longer be "relied upon."

"Had that letter been discovered and was turned over as part of discovery, and the legal process was going along without any hiccups, there might not have been any need for the task force to be created," McQueen said. "Upon looking at that information, the chairwoman determined that it was important for the committee to step in to safeguard the rights of all the voters."

After two recounts of votes, Florida Secretary of State Sue M. Cobb, a Republican, on Nov. 20 certified Buchanan as the winner by 369 votes in the race to succeed two-term Republican Rep. Katherine Harris, who left the seat open to pursue a Senate bid that was unsuccessful.

Jennings and her supporters cried foul, pointing to the large undervote in Sarasota County. Because Jennings prevailed in Sarasota County, her backers said that Jennings would have won had the electronic voting machines worked properly.

But Buchanan and his allies said the undervotes in Sarasota could be attributed to where the contest appeared on some ballots — or that voters simply opted not to participate in the election.

JUANITA MILLENDER-MCDONALD, CALIFORNIA
CHAIRWOMAN

Congress of the United States

House of Representatives
COMMITTEE ON HOUSE ADMINISTRATION
1309 Longworth House Office Building
(202) 225-2061

Washington, D.C. 20515-6157
www.house.gov/cha

VERNON J. EHLERS, MICHIGAN
RANKING MEMBER

April 3, 2007

VIA U.S. MAIL AND FACSIMILE

Hayden R. Dempsey
Greenberg Traurig, PA
101 East College Avenue
Tallahassee, FL 32301

Re: *FL-13 Election Contest – Christine Jennings v. Vern Buchanan*

Dear Mr. Dempsey:

I am writing you to follow up on earlier correspondence that I sent you regarding a status conference that I have scheduled for April 17th relating to the above referenced election contest. The contestant in that contest, Christine Jennings, claims that she has a right to the office or in the alternative is entitled to a new election due to the failure of the voting system used in the election to record the vote accurately. The contestant claims that the iVotronic voting system utilized in Sarasota County did not function properly and failed to record a sufficient number of votes cast for her that affected the outcome of the election. The contestant has set forth in her Notice of Contest the specific grounds upon which she bases this claim.

The purpose of the status conference is to obtain from the parties their views regarding the nature and extent of the investigation that would be necessary for the task force to assess those claims and discharge its responsibility.

In preparation for the conference and for use by all task force members, I request a written memorandum be submitted by April 13, 2007, addressing the following matters:

1. State Remedies: Whether there are compelling reasons for the task force not to proceed with an investigation at this time?
2. Discovery: If the task force authorizes discovery under the Federal Contested Election Act, what discovery do the parties anticipate undertaking?
3. Voting Machines/Source Code/Software: Whether the task force can rely and if so, to what extent on the tests conducted by Florida authorities and their experts? Is

there a need for additional testing and if so, the nature and reasons for additional tests. How can the task force protect the proprietary interests of the voting machine vendor/manufacturer should discovery entail an examination of trade secrets?

For future correspondence, please also indicate the best method for the task force to communicate with your office. If you have any questions or concerns, please do not hesitate to contact Janelle Hu at the Committee on House Administration at ~~XXXXXXXXXXXXXXX~~. I look forward to working with you and the full task force in a judicious and cooperative manner.

Regards,

A handwritten signature in black ink, appearing to read "Charles A. Gonzalez", written in a cursive style.

Charles A. Gonzalez

cc: The Honorable Zoe Lofgren
The Honorable Vernon J. Ehlers, Ranking Member

JUANITA MILLENDER-MCDONALD, CALIFORNIA
CHAIRWOMAN

Congress of the United States

House of Representatives

COMMITTEE ON HOUSE ADMINISTRATION
1309 Longworth House Office Building
(202) 226-2061

Washington, D.C. 20515-6157

www.house.gov/cha

VERNON J. EHLERS, MICHIGAN
RANKING MEMBER

April 16, 2007

The Honorable Juanita Millender-McDonald
Chairwoman
Committee on House Administration
1309 Longworth House Office Building
Washington, D.C. 20515

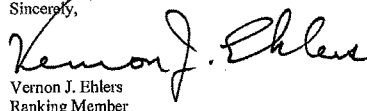
Dear Madam Chairwoman,

As you know, I have deep concerns about the timeliness of the establishment of a Committee task force to act on the election contest filed by Christine Jennings against our colleague, Representative Vern Buchanan. I believe that organizing the task force while Ms. Jennings' case is under careful consideration in the Florida Circuit and Appeals Courts is an inappropriate interference of the federal legislative branch in state judicial proceedings that threatens to deprive this Committee of the valuable complete product of the state judicial process. As both sides of the aisle on the Committee agreed prior to last year's election, initiating Committee involvement in this case prior to the full pursuit of state remedies by the contestant is premature and risky.

Despite my deep reservations about the hasty initiation of this task force, the Republican members of the Committee will be involved in its work. I strongly believe that the work of the task force and its final report to the Committee would greatly benefit from the participation of both Representative Kevin McCarthy and Representative Dan Lungren. The credibility of the task force's final recommendation to the Committee will certainly be strengthened by the participation of these two talented Members. I will appoint Representative McCarthy as the Republican member on the task force and have asked Representative Lungren to participate as an observer as well. Although we may disagree on the timing used to examine issues related to this contest, I know we will be able to continue our practice of working together to bring this contest to a proper resolution.

I realize that outside groups are placing significant pressure on the Democratic Caucus to politicize this Committee's serious responsibilities in consideration of Ms. Jennings' contest against Representative Buchanan, but I urge you to resist that pressure and reconsider this rush to preempt the state proceedings before they have run their proper course. The integrity of our election system and the trust placed in it by the voters of this country demand that this Committee approach this matter deliberatively, not hastily.

Sincerely,



Vernon J. Ehlers
Ranking Member

CC: The Honorable Charles Gonzalez
The Honorable Kevin McCarthy
The Honorable Daniel Lungren

GOP, seeking 'clarity,' holds up task force

By JEREMY WALLACE

H-T POLITICAL WRITER

jeremy.wallace@heraldtribune.com

Before it can even begin, a congressional task force reviewing Sarasota's disputed election is already bogging down.

In a move that seems to portend the bitter partisanship that awaits, GOP leaders are refusing to even appoint a member to the task force, preventing the newly created group's chairman from setting a schedule or even basic ground rules for how the investigation will start.

It's yet another frustrating delay for Democrat Christine Jennings, who has been disputing Republican Vern Buchanan's 369-vote margin of victory for the 13th Congressional District since November.

"I thought they wanted to work in a bipartisan way," Jennings said. "This is the kind of partisanship people don't want to see in Washington."

U.S. Rep. Vernon Ehlers, R-Michigan, said until he gets more "clarity" on why the task force was formed and what specifically it will look at, he's hesitant to appoint a member to what is supposed to be a three-member task force, a spokeswoman for Ehlers said.

As the highest ranking Republican on the committee, Ehlers is responsible for choosing the GOP member for the task force.

With Congress about to recess for its annual spring break, the panel is likely to be without a Republican until at least April 17, when members return to Washington.

The GOP delay is a development that is sure to test Rep. Charles Gonzalez, D-Texas, who found out late last week he'd be heading the panel looking into the 13th Congressional District race.

The longer the GOP stalls the formation of an investigative task force, the less likely Jennings' chances become of winning a new election, experts say.

Jennings' hopes are already considered slight because Buchanan has been in the seat for nearly three months and Jennings has so far been unsuccessful, either in Congress or in separate lawsuits, of winning a reversal.

Buchanan, R-Longboat Key, was declared the winner by 369 votes. Jennings has challenged the results based on an abnormally high undervote in Sarasota County.

Gonzalez, a former judge in San Antonio who prides himself on being a consensus builder, said he will encourage Ehlers to appoint a member soon. The key to making sure the process is open and fair is having the GOP play a role, he said.

"That's vital to the process," Gonzalez, starting his fifth term in Congress, said. "Surely they are going to be part of it."

One of Ehlers' biggest concerns is that the task force is organizing before Florida courts can rule on Jennings' challenge of the election. Ehlers is worried that actions taken by Congress could influence the judicial proceedings in Florida.

"We should not have any public hearings until it plays out in the courts," said Salley Collins, press secretary for Republicans on the House Administration Committee, which has jurisdiction over election disputes.

But Gonzalez said the committee should move forward, independent of the courts, because the U.S. Constitution charges Congress as being the final determinant in a contested election.

The partisan divide was expected because of the value both parties place on every seat in Congress, said David Kimball, who teaches political science at the University of Missouri-St. Louis.

Kimball said both parties will fight to get an incumbency edge in Sarasota because of how often incumbents win re-election. Since 1998, incumbents have been re-elected to the U.S. House 98 percent of the time.

As much as some Democrats would like to proceed with the investigation, even without a Republican on the task force, it would turn the investigation into a super-partisan affair, Kimball said.

"That would be a mistake for the Democrats," Kimball said.

For Jennings, the courts have been excruciatingly slow. Jennings is still awaiting what was supposed to be an expedited ruling on her appeal of a trial court's December ruling preventing her from having access to computer software codes. Those codes are critical to determining if voting machines malfunctioned on Election Day in Sarasota, her attorneys have argued.

Once the appeals court rules, the case would likely return back to the lower court, which has yet to rule on Jennings' overall challenge.

Jeremy Wallace can be reached at 361-4966 or jeremy.wallace@heraldtribune.com.

JUANITA MILLENDER-MCDONALD, CALIFORNIA
CHAIRWOMAN

Congress of the United States

House of Representatives
COMMITTEE ON HOUSE ADMINISTRATION
1309 Longworth House Office Building
(202) 225-2061

Washington, D.C. 20515-6157
www.house.gov/cha

VERNON J. EHLERS, MICHIGAN
RANKING MEMBER

March 27, 2007

Kendall Coffey
Coffey & Wright, LLP
2665 South Bayshore Drive
PH-2, Grand Bay Plaza
Miami, FL 33133

Re: *FL-13 Election Contest – Christine Jennings v. Vern Buchanan*


Dear Mr. Coffey:

Pursuant to Rule X of the Rules of the U.S. House of Representatives and section 393 of the Federal Contested Election Act, the Clerk of the House has transmitted to the Committee on House Administration for its consideration a Notice of Contest filed by Christine Jennings relating to the election for the Office of Representative in the One Hundred Tenth Congress from the 13th District of Florida. The Chairwoman Juanita Millender-McDonald of the Committee has referred the matter pursuant to Rule 16 of the Committee Rules to a three member ad hoc election panel and has appointed me as Chairman of that panel. The Chairwoman has charged the panel with the responsibility to investigate this matter and report its findings and recommendation back to the full Committee for its consideration.

In response to the Notice of Contest, the contestee Vern Buchanan has filed a Motion to Dismiss which motion is now pending before the panel for its consideration. Prior to the panel's consideration of that motion and prior to the panel granting permission for compelled discovery to commence under section 386 of the Federal Contested Election Act, I intend to conference with my colleagues on the panel to consider how the panel can orderly and expeditiously investigate this matter and report its findings back to the full committee. I am requesting your presence at that conference on Tuesday, April 17, 2007 at 10 a.m. in 1309 Longworth House Office Building. I will soon forward to you a request for information and a list of questions that the panel would like you to be prepared to address at that time.

Your cooperation in this matter is greatly appreciated.

Regards,



Charles A. Gonzalez

cc: The Honorable Juanita Millender-McDonald, Chairwoman
The Honorable Zoe Lofgren
The Honorable Vernon J. Ehlers, Ranking Member

JUANITA MILLENDER-MCDONALD, CALIFORNIA
CHAIRWOMAN

Congress of the United States

House of Representatives
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VERNON J. EHLERS, MICHIGAN
RANKING MEMBER

March 27, 2007

Glenn T. Burhans, Jr.
Hayden R. Dempsey
Seann M. Frazier
Greenberg Traurig, P.A.
101 East College Avenue
Tallahassee, FL 32301

Re: *FL-13 Election Contest – Christine Jennings v. Vern Buchanan*

Dear Mr. Burhans, Mr. Dempsey, and Mr. Frazier:

Pursuant to Rule X of the Rules of the U.S. House of Representatives and section 393 of the Federal Contested Election Act, the Clerk of the House has transmitted to the Committee on House Administration for its consideration a Notice of Contest filed by Christine Jennings relating to the election for the Office of Representative in the One Hundred Tenth Congress from the 13th District of Florida. The Chairwoman Juanita Millender-McDonald of the Committee has referred the matter pursuant to Rule 16 of the Committee Rules to a three member ad hoc election panel and has appointed me as Chairman of that panel. The Chairwoman has charged the panel with the responsibility to investigate this matter and report its findings and recommendation back to the full Committee for its consideration.

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Your cooperation in this matter is greatly appreciated.

Regards,


Charles W. Gonzalez

cc: The Honorable Juanita Millender-McDonald, Chairwoman
The Honorable Zoe Lofgren
The Honorable Vernon J. Ehlers, Ranking Member

JUANITA MILLENDER-MCDONALD, CALIFORNIA
CHAIRWOMAN

Congress of the United States

House of Representatives

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VERNON J. EHLERS, MICHIGAN
RANKING MEMBER

April 16, 2007

Hon. Vernon J. Ehlers
U.S. House of Representatives
2182 Rayburn House Office Building
Washington, D.C. 20515

Re: *FL-13 Election Contest -- Christine Jennings v. Vern Buchanan*

Dear Representative Ehlers:

As you are aware, we are scheduled to have a status conference with counsel for the parties involved in the election contest of the Office of Representative in the One Hundred Tenth Congress from the 13th District of Florida on Tuesday, April 17, 2007 at 10 a.m. in 1309 Longworth House Office Building.

For your information, a court reporter will be present at the status conference. Furthermore, while the meeting will be closed to the public and press, the press will be advised that we may be available for comment at the conclusion of the status conference.

I look forward to seeing you on Tuesday.

Regards,



Charles A. Gonzalez

JUANITA MILLENDER-MCDONALD, CALIFORNIA
CHAIRWOMAN

Congress of the United States

House of Representatives

COMMITTEE ON HOUSE ADMINISTRATION
1309 Longworth House Office Building
(202) 225-2061

Washington, D.C. 20515-6157

www.house.gov/cha

VERNON J. EHRLER, MICHIGAN
RANKING MEMBER

April 16, 2007

Hon. Zoe Lofgren
U.S. House of Representatives
102 Cannon House Office Building
Washington, D.C. 20515

Re: *FL-13 Election Contest – Christine Jennings v. Vern Buchanan*

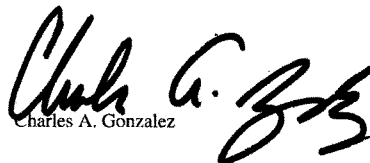
Dear Representative Lofgren:

As you are aware, we are scheduled to have a status conference with counsel for the parties involved in the election contest of the Office of Representative in the One Hundred Tenth Congress from the 13th District of Florida on Tuesday, April 17, 2007 at 10 a.m. in 1309 Longworth House Office Building.

For your information, a court reporter will be present at the status conference. Furthermore, while the meeting will be closed to the public and press, the press will be advised that we may be available for comment at the conclusion of the status conference.

I look forward to seeing you on Tuesday.

Regards,


Charles A. Gonzalez

ROBERT A. BRADY, PENNSYLVANIA
/ CHAIRMAN

Congress of the United States

House of Representatives

COMMITTEE ON HOUSE ADMINISTRATION

1309 Longworth House Office Building

Washington, D.C. 20515-6157

(202) 225-2061

www.house.gov/cha

VERNON J. EHLERS, MICHIGAN
/ RANKING MEMBER

April 25, 2007

Hon. Vernon J. Ehlers
Ranking Member
Committee on House Administration
1313 Longworth House Office Building
Washington, D.C. 20515


Dear Ranking Member Ehlers:

Thank you for your letter of April 16, 2007, designating a Minority Member to serve on the ad hoc election panel on the contested election in the 13th Congressional District of Florida, and expressing your concern about the general timing of the proceedings.

Pursuant to Committee Rule 16 and your recommendation, I hereby appoint Representative McCarthy to serve on the ad hoc election panel. Participation by other Committee Members during hearings or proceedings is governed by Committee Rule 9. I will respond to the balance of your letter at a later time.

I look forward to working with you in the coming months.

Sincerely,



Robert A. Brady
Chairman

**MEETING TO DISCUSS MATTERS PERTAINING TO
THE CONTESTED ELECTION IN THE 13TH CON-
GRESSIONAL DISTRICT OF FLORIDA**

MEETING
BEFORE THE
**COMMITTEE ON HOUSE
ADMINISTRATION**

**TASK FORCE FOR THE CONTESTED ELECTION IN
THE 13TH CONGRESSIONAL DISTRICT OF FLORIDA**

HOUSE OF REPRESENTATIVES
ONE HUNDRED TENTH CONGRESS
FIRST SESSION

MEETING HELD IN WASHINGTON, DC, MAY 2, 2007

Printed for the use of the Committee on House Administration



**Official Task Force Meeting
May 2, 2007**

Motion #1 – Initiate an Investigation

I move that the Task Force initiate an investigation of Florida's 13th Congressional District election (offered by Representative Zoe Lofgren).

Member	Vote
Rep. Gonzalez	Y
Rep. Lofgren	Y
Rep. McCarthy	N

Motion #2 – How to Proceed

I move that the Chairman be authorized and directed to secure the assistance of the Government Accountability Office, which shall be requested to design and propose testing protocols to determine the reliability of the equipment used in the FL-13 election, taking into account recommendations by the contestant and contestee. The Task Force shall approve any testing protocols prior to execution by the GAO. The GAO may procure such expertise and assistance from governmental or non-governmental experts and entities as it deems necessary, and shall report its findings to the task force (offered by Representative Zoe Lofgren).

Member	Vote
Rep. Gonzalez	Y
Rep. Lofgren	Y
Rep. McCarthy	Y

ROBERT A. BRADY, PENNSYLVANIA
CHAIRMAN

Congress of the United States

House of Representatives

COMMITTEE ON HOUSE ADMINISTRATION

1309 Longworth House Office Building

Washington, D.C. 20515-6157

(202) 225-2061

www.house.gov/cha

VERNON J. EHLERS, MICHIGAN
RANKING MEMBER

May 25, 2007

The Honorable David M. Walker
Comptroller General of the United States
U.S. Government Accountability Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Walker:

This is to request that the Government Accountability Office (GAO) provide the Task Force with assistance in connection with its technical inquiry of the voting equipment used in the 2006 contested election in the 13th congressional district of Florida. As you are aware, the Task Force met on May 2nd and voted unanimously to seek the assistance of GAO in this matter. GAO's analysis should include a review of the existing testing and evaluation conducted by the State of Florida, the manufacturers of such voting equipment, and other competent entities with regard to the voting equipment used in this contested election. The review should also include opinions and recommendations from Contestant's and Contestee's representatives as to the adequacy or inadequacy of the testing performed to date. Based on this review and a review of the pleadings and supporting documents in this contest, GAO should recommend to the Task Force what additional tests should be done to determine whether the voting system contributed to the substantial undervote recorded in the election. GAO should establish the protocols for the additional testing and present them for the Task Force's approval. Should the Task Force order the tests be undertaken, GAO should be prepared to perform or oversee the tests. GAO is authorized to procure such expertise and assistance that it considers necessary to assist it with these responsibilities from governmental or non-governmental experts and entities.

We recognize that GAO generally does not have a right of access to the nonpublic records and testing documentation of the State of Florida, the manufacturers of voting equipment or other non-federal entities that may have

done relevant testing or evaluation relating to this issue. The Task Force recognizes that GAO will need to obtain the voluntary cooperation of the State of Florida, the participants in the Florida State University study, the manufacturers of the voting equipment, and other entities that have performed relevant work relating to this contested election. Confidentiality agreements are anticipated to address legitimate concerns relating to protecting any asserted proprietary interests. If GAO cannot obtain relevant documentation or information through such voluntary cooperation, GAO should report this to the Task Force. The Task Force will then determine whether it will use its own enforcement mechanisms to obtain the necessary documents or information.

The Task Force also recognizes the financial strain that this request for assistance places on GAO resources, as well as on GAO's existing commitments to perform work in response to statutory mandates and congressional requests. The Task Force commits to working with GAO to obtain necessary supplemental funding for this effort. In addition, the Task Force plans to request that other departments and agencies of the federal government including, but not limited to, the National Institute of Standards and Technology and the National Security Agency, provide on a non-reimbursable basis the support and assistance as is requested by GAO.

If you have any questions regarding this request, please contact Charles Howell at (202) 225-2061. Thank you in advance for your attention to this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles A. Gonzalez", written in a cursive style.

Charles A. Gonzalez
Chairman
Task Force on FL-13



United States Government Accountability Office
Washington, DC 20548

June 5, 2007

The Honorable Charles A. Gonzalez
Chairman, Task Force on FL-13
Committee on House Administration
House of Representatives

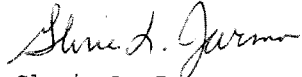
Dear Mr. Chairman:

Thank you for your letter of May 25, 2007, asking the Government Accountability Office to provide the Task Force on FL-13 with assistance in connection with its technical inquiry of the voting equipment used in the 2006 contested election in the 13th congressional district of Florida.

GAO accepts your request. We appreciate your understanding of our lack of access to the nonpublic records and testing documentation of the State of Florida, the manufacturers of voting equipment or other non-federal entities that may have performed relevant testing or evaluation. GAO will need to obtain the voluntary cooperation of the State of Florida, the participants in the Florida State University study, the manufacturers of the voting equipment, and other entities that have performed relevant work relating to the contested election. As you requested, we will notify the Task Force if we cannot obtain relevant documentation or information voluntarily or in a timely manner. Another consideration is financial costs and we are grateful for your commitment to assist us in obtaining supplemental funding and, if needed, asking executive branch agencies to provide us support and assistance on a non-reimbursable basis.

GAO's principal point of contact to the Task Force will be Mr. Keith Rhodes, Chief Technologist. If you have any questions, please contact Mr. Rhodes at 202-512-2700 or me at 202-512-4400.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Gloria L. Jarmon". The signature is fluid and cursive, with the first name "Gloria" being more prominent.

Gloria L. Jarmon
Managing Director for
Congressional Relations

cc: The Honorable Zoe Lofgren
House of Representatives

The Honorable Kevin McCarthy
House of Representatives

Ref: CCAR 07-0928

Roll Call

June 11, 2007 Monday

House Study of Florida Race May Take Months

BYLINE: Matthew Murray, ROLL CALL STAFF**LENGTH:** 844 words

The Government Accountability Office last week told a special House elections task force that it may take months to determine what allegedly caused thousands of votes to disappear in a Florida House election in November, likely dimming the prospects that the sun will set in the still-disputed contest before late 2007 or beyond.

GAO officials on Thursday met in private with the special House Administration elections panel, multiple sources confirmed, to discuss the status of the agency's investigation into the cause of 18,000 possible "undervotes" in the House contest between now-Rep. Vern Buchanan (R) and bank executive Christine Jennings (D).

In January, the House seated Buchanan as ex-Rep. Katherine Harris' (R) replacement, but Democratic leaders held open the possibility that Jennings eventually could be seated.

Meanwhile, the three-member elections task force is expected to meet publicly as early as this week to decide how the investigation will proceed. Although details of the proposed meeting were not available as of press time Friday, GAO spokeswoman Nancy Kingsbury said it will "take a couple of months" for the auditing agency to formulate its game plan before reporting its findings back to the task force.

"We're just getting started," Kingsbury said. "We have developed a plan for the preliminary phase, which is just to look at what others have done - what the state did, what the testing people have done, et cetera."

The lone Republican on the elections task force, Rep. Kevin McCarthy (Calif.), told Roll Call on Friday that the GAO assured the group that by September the auditor would report one of two things to the task force. The first possibility: a conclusion that the GAO has found no indication that the electronic voting machines malfunctioned.

"Or," McCarthy said, "[the GAO might say that it] thought this and this were wrong, so [the task force has] to go further."

McCarthy said the process from the start has been mired in logistical and budgetary challenges, including task force Chairman Charlie Gonzalez (D-Texas) and others setting expectations too high by predicting that the GAO could complete its portion of the investigation in less than two months.

"When we had the first discussion, [Democrats] kept saying 45 days," McCarthy said. "There's no way you can do this in 45 days."

McCarthy also said the GAO has been hesitant to give much more than an educated

guess regarding how much the investigation will cost, failing to give even a rough estimate of how many agency man-hours it will take to complete the monumental task.

"I kept hearing \$1 million prior to the meeting ... [but] they were just throwing a number out," McCarthy said. "What they really have to do is analyze what the state already has done."

Florida auditors already have certified that the Jennings-Buchanan contest was decided by just 369 votes. Last month, Jennings stopped pursuing her claims in the Florida court system that the election was botched. For months, the various parties involved wrangled, in part, over whether the manufacturer of the suspicious voting machines should be required to offer up its trade secrets - a dispute that may live another day in the GAO's investigation.

Should the voting machine manufacturer balk again, Kingsbury said the agency does not have subpoena power to directly force the company to cough up evidence, even if it could prove to be crucial. Although the agency could call on the House panel to force the manufacturer and perhaps other witnesses to comply, that process could add days or weeks to a dispute already in its eighth month.

"We don't know, we haven't asked yet, but there's a good question whether [the manufacturer is] going to give it to us," Kingsbury said. "This is a very unusual request for us. ... We anticipate some obstacles ... this is pretty arcane software management."

In a perfect world, Kingsbury said the GAO could complete its investigation in 45 days. But with technical glitches or legal snags all but certain, "it will probably take less than six [months]."

A Democratic source said the task force will vote at its next open meeting on an official time frame for the overall investigation, which most observers agree has far exceeded original expectations. But with candidates already declaring for 2008 House races, the source said, a renewed focus on the Jennings-Buchanan race has emerged.

"It's something that people want to get done in a timely fashion because the next thing you know people are going to have to start filing again for the next election," the source said.

Gonzalez appeared to confirm the source's sentiment in an e-mail message Friday.

"While the task force understands the sensitive nature of this investigation and the need for ample time to complete a thorough analysis, we remain committed to concluding this inquiry in a timely fashion," Gonzalez said. "We will work with the GAO to determine an appropriate timeline that provides enough time for a comprehensive analysis that also respects the need to arrive at a solution in a timely fashion."

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G A O

Accountability • Integrity • Reliability

United States Government Accountability Office
Washington, DC 20548

June 20, 2007

The Honorable Charles A. Gonzalez
Chairman, Task Force on Florida-13
Committee on House Administration
House of Representatives

Subject: Review of FL-13 Voting Systems

Dear Mr. Chairman:

This letter confirms our commitment to review the voting equipment used in the 2006 contested election in the 13th congressional district of Florida based on your letter of May 25, 2007, to the Comptroller General. As we discussed with you and the other members of the Task Force during the public meeting on June 14, 2007, while we continue to believe that it will take until September for us to complete our review, we appreciate the Task Force's urgency and its target date of July 27, 2007, and we will take all possible steps to expedite our review without compromising its integrity. The enclosure to this letter contains the engagement plan as approved during the Task Force's public meeting. We will work with both majority and minority staffs to provide periodic updates of our review. If we should encounter resistance from any of the organizations during the course of our review, we will notify the Task Force.

We look forward to working with you and your staff on this assignment. Should you have any questions, please contact me on (202) 512-6000 or [redacted]; Naba Barkakati, Senior-Level Technologist on (202) 512-6000 or [redacted]; or Richard Hung, Assistant Director, on (202) 512-6000 or [redacted].

Sincerely yours,

Keith Rhodes
Chief Technologist
Director, Center for Technology and Engineering

Enclosure

cc: The Honorable Zoe Lofgren
The Honorable Kevin McCarthy
The Honorable Dan Lungren



G A O

Accountability • Integrity • Reliability

United States Government Accountability Office
Washington, DC 20548

**Engagement Plan for Review of Voting Equipment Used in Florida's 13th
Congressional District During the 2006 General Election**

High-level objective: To what extent could the voting machines have contributed to the large undervote? Ascertain whether additional testing is needed to determine whether the voting systems contributed to the undervote.

Scope: Voting machines and equipment used in Sarasota County. Though Florida's 13th Congressional District includes voters from five counties (Charlotte, Desoto, Hardee, Manatee, and Sarasota), because the contestant's claims and the Florida state audit focus on Sarasota County, we will also limit our scope to Sarasota County.

Job Objectives: (1) What voting systems and equipment were used in Sarasota County and what processes governed their use? (2) What is the scope of the undervote in Sarasota County? (3) To what extent were tests conducted on the voting systems in Sarasota County prior to the general election and what were the results of those tests? (4) Considering the tests that were conducted on the voting systems from Sarasota County after the general election, are additional tests needed to determine whether the voting systems contributed to the undervote?

Approach:

- 1) What voting systems and equipment were used in Sarasota County and what processes governed their use?
 - a) Identify voting systems and equipment used in Sarasota County during the 2006 general election, including vote casting machines and vote tabulation machines. Identification should include versions numbers of all hardware and software in use.

Information sources: Sarasota County Supervisor of Elections.

- b) Verify that the voting systems were approved for use by the Florida Division of Elections and the Sarasota County Supervisor of Elections.

Information sources: Sarasota County Supervisor of Elections, Florida Division of Elections, Florida and county requirements for such approvals.

As approved by the FL-13 Task Force on June 14, 2007

- c) What procedures were used to set-up and operate voting systems and equipment for the 2006 general election? Include systems and equipment used for election day, early, and absentee voting.

Information sources: Sarasota County Supervisor of Elections, Florida and county requirements for such procedures.

- d) How are votes tallied and certified in Sarasota County, including recount procedures?

Information sources: Sarasota County Supervisor of Elections, Florida and county requirements for such procedures.

- e) What different ballot styles were used in Sarasota County during the general election?

Information sources: Sarasota County Supervisor of Elections.

- f) What problems were reported regarding the performance and use of the voting systems during the general election?

Information sources: Problem reports from Sarasota County Supervisor of Elections, submissions from contestant and contestee.

- g) What is the current disposition of the voting systems and equipment that were used on election day, including hardware, software, and any removable media? How would GAO gain access to such machines and equipment?

Information sources: Sarasota County Supervisor of Elections.

2) What is the scope of the undervote in Sarasota County?

- a) Analyze the distribution of undervotes in Sarasota County in the 2006 general election to identify any patterns, such as by ballot style, precincts, or geography.

Information sources: Machine-level results data from Sarasota County Supervisor of Elections.

- b) Do the certified vote totals from Sarasota County for the 13th Congressional District race match those recorded by the machines?

Information sources: Vote image log files and certified vote totals from Sarasota County Supervisor of Elections.

- c) How does the undervote in the 13th Congressional District race compare to other races in the 2006 general election and in previous elections that used these voting systems and equipment?

Information sources: Data on the history of usage of the voting systems and equipment from the Sarasota County Supervisor of Elections, election results from prior general elections.

- 3) To what extent were tests conducted on the voting systems in Sarasota County prior to the general election and what were the results of those tests?

- a) Identify and review testing procedures conducted by the equipment manufacturers prior to the conduct of the election. How are problems identified by the manufacturers communicated to users?

Information sources: ES&S

- b) Identify and review testing procedures conducted by the Florida Division of Elections prior to the conduct of the election.

Information sources: Florida Voting System Standards, Florida Division of Elections, test plans and reports

- c) Identify and review testing procedures conducted by the Sarasota County Supervisor of Elections prior to the conduct of the election.

Information sources: Sarasota County Supervisor of Elections, test plans and reports

- 4) Considering the tests that were conducted on the voting systems from Sarasota County after the general election, are additional tests needed to determine whether the voting systems contributed to the undervote?

- a) Assess the conduct of the parallel testing.

Information sources: Florida Division of Elections, Sarasota County Supervisor of Elections, audit team, state audit report, submissions from contestant and contestee.

- b) Assess the conduct of the independent source code review conducted at Florida State University at the Security and Assurance in Information Technology (SAIT) lab.

Information sources: Unredacted software review and security analysis report, statement of work, Florida Division of Elections, SAIT team, submissions from contestant and contestee.

- c) Assess the conduct of the examination of election procedures and practices.

Information sources: Florida Division of Elections, Sarasota County Supervisor of Elections, audit team, state audit report, submissions from contestant and contestee.

- d) Are there any areas where additional testing could help determine whether the voting systems contributed to the undervote?

Information sources: Analysis of the testing conducted before and after the general election to identify any tests that were not conducted or were conducted in an ineffective manner.

- e) For any additional tests, identify the test environment and test protocol to be used, as well as the resources needed to conduct such testing.

Information sources: Analysis of the testing conducted before and after the general election. Availability of specific voting systems in Sarasota County to meaningfully recreate conditions from the 2006 general election.

High-level Schedule:

June 2007 – Initiate contacts with the involved entities (Florida Division of Elections, Sarasota County Supervisor of Elections, SAIT team, ES&S, and others, as needed). Begin data collection and meetings. Review Task Force submissions.

July 2007 – Continue data collection and meetings. Begin data analysis of undervote data. Assess voting system tests conducted before and after the election.

August 2007 – Continue analysis and follow-up on any needed data collection. Identify any additional needed tests and identify necessary resources and environment.

September 2007 – Finalize findings. Prepare and deliver briefing on findings to Task Force.

Note that this schedule depends on the timely cooperation of all involved entities to provide GAO the relevant documentation or information. Should GAO not be able to gain the timely cooperation of an involved entity, we will report this to the Task Force.

**MEETING TO DISCUSS THE GOVERNMENT
ACCOUNTABILITY OFFICE WORK PLAN**

MEETING
BEFORE THE
**COMMITTEE ON HOUSE
ADMINISTRATION**
**TASK FORCE FOR THE CONTESTED ELECTION IN
THE 13TH CONGRESSIONAL DISTRICT OF FLORIDA**
HOUSE OF REPRESENTATIVES
ONE HUNDRED TENTH CONGRESS
FIRST SESSION

MEETING HELD IN WASHINGTON, DC, JUNE 14, 2007

Printed for the use of the Committee on House Administration



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**Official Task Force Meeting
June 14, 2007**

Motion #3 – Clarifying Amendment to GAO Engagement Plan

High Level Objective: Did the voting machine malfunction contribute to the large undervote? Ascertain whether additional testing is needed to determine whether the voting system malfunction contributed to the undervote (offered by Representative Kevin McCarthy).

****Motion was withdrawn by Representative Kevin McCarthy*

Motion #4 – Approve GAO Work Plan

Mr. Chairman, I move the approval of the GAO Engagement Plan with a target date of July 27, 2007; and that the Chairman transmit the GAO Engagement Plan to the parties to the contest, and that upon receipt, the parties will have seven days to submit comments to the Committee on House Administration which will transmit such comments forthwith to the GAO; and that the Chairman notify individuals, offices, and entities identified in the GAO Engagement Plan that the Task Force seeks their full, prompt and voluntary cooperation with the GAO (offered by Representative Zoe Lofgren).

Member	Vote
Rep. Gonzalez	Y
Rep. Lofgren	Y
Rep. McCarthy	Y

ROBERT A. BRADY, PENNSYLVANIA
CHAIRMAN

VERNON J. BILERS, MICHIGAN
RANKING MEMBER

Congress of the United States
House of Representatives
COMMITTEE ON HOUSE ADMINISTRATION
1309 Longworth House Office Building
Washington, D.C. 20515-6137
(202) 225-2061
www.house.gov/cha

June 15, 2007

VIA FEDEX AND FACESMILE

Hayden R. Dempsey
Greenberg Traurig, P.A.
101 East College Avenue
Tallahassee, FL 32301

Dear Mr. Dempsey:

On June 14, 2007, the Task Force established by the Committee on House Administration to investigate Florida's 13th Congressional District election contest unanimously agreed to the following:

- The Task Force approves the Government Accountability Office Engagement Plan with a target date of July 27, 2007;
- The Chairman of the Task Force will transmit the Government Accountability Office Engagement Plan to the parties to the contest, and upon receipt, the parties will have seven days to submit comments to the Committee on House Administration which will transmit such comments forthwith to the Government Accountability Office; and
- The Chairman of the Task Force will notify individuals, offices, and entities identified in the Government Accountability Office Engagement Plan that the Task Force seeks their full, prompt and voluntary cooperation with the Government Accountability Office.

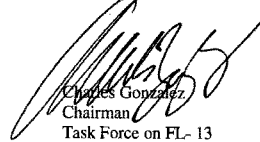
In accordance with this directive, I enclose a copy of the Government Accountability Office Engagement Plan and request that you respond in writing to the Committee on House Administration no later than June 22, 2007 with any comments.

Your comments should be as concise as possible in addressing the central questions relating to:

- The adequacy or inadequacy of prior testing of the electronic voting machines;
- Whether additional tests are needed; and
- Protocols, should additional tests be required.

If you have any questions regarding this request, please contact Thomas Hicks at (202) 225-2061.

Sincerely,


Charles Gonzalez
Chairman
Task Force on FL- 13

ROBERT A. BRADY, PENNSYLVANIA
CHAIRMAN

Congress of the United States

House of Representatives
COMMITTEE ON HOUSE ADMINISTRATION
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Washington, D.C. 20515-6157
(202) 225-2061
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VERNON J. EHLEBS, MICHIGAN
RANKING MEMBER

June 15, 2007

VIA FEDEX AND FACESMILE

Glenn T. Burhans, Jr.
Greenberg Traurig, P.A.
101 East College Avenue
Tallahassee, FL 32301

Dear Mr. Burhans:

On June 14, 2007, the Task Force established by the Committee on House Administration to investigate Florida's 13th Congressional District election contest unanimously agreed to the following:

- The Task Force approves the Government Accountability Office Engagement Plan with a target date of July 27, 2007;
- The Chairman of the Task Force will transmit the Government Accountability Office Engagement Plan to the parties to the contest, and upon receipt, the parties will have seven days to submit comments to the Committee on House Administration which will transmit such comments forthwith to the Government Accountability Office; and
- The Chairman of the Task Force will notify individuals, offices, and entities identified in the Government Accountability Office Engagement Plan that the Task Force seeks their full, prompt and voluntary cooperation with the Government Accountability Office.

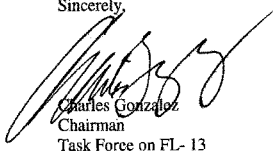
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- The adequacy or inadequacy of prior testing of the electronic voting machines;
- Whether additional tests are needed; and
- Protocols, should additional tests be required.

If you have any questions regarding this request, please contact Thomas Hicks at (202) 225-2061.

Sincerely,



Charles Gonzalez
Chairman
Task Force on FL- 13

BERT A. BRADY, PENNSYLVANIA
CHAIRMAN

Congress of the United States

House of Representatives
COMMITTEE ON HOUSE ADMINISTRATION
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VERNON J. EHLERS, MICHIGAN
RANKING MEMBER

June 15, 2007

VIA U.S. MAIL AND FACESMILE

Kathy Dent
Supervisor of Elections
Sarasota County Florida
101 S. Washington Blvd.
Sarasota, FL 34236

Dear Ms. Dent:

Under Article I, Section 5 of the U.S. Constitution, each House of Congress has the express authority to be the judge of the "elections and returns" of its own Members. Pursuant to this Constitutional authority, the Federal Contested Elections Act, Committee rules, and past practice, the Committee on House Administration established a task force to investigate Florida's 13th Congressional District election contest.

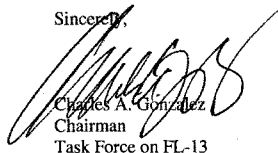
The Task Force met on May 2nd and voted unanimously to seek the assistance of the Government Accountability Office (GAO) in connection with the Task Force's technical inquiry of the voting equipment used in the November 2006 contested election. On June 14th, the Task Force unanimously agreed to seek full, prompt, and voluntary cooperation of all individuals, offices, and entities identified by GAO in its work plan.

The Sarasota County Supervisor of Elections has been identified by the GAO as possessing or having access to information and/or items that are necessary to conduct a thorough review and analysis. In that regard, the Task Force respectfully requests your full and timely cooperation. If for any reason you cannot comply with this or any subsequent GAO request, you are instructed to immediately notify Thomas Hicks at Thomas.Hicks@mail.house.gov or (202) 225-2061.

I cannot adequately stress the importance of the timeliness and completeness of your assistance in responding to the GAO. If the GAO does not receive an immediate response, or a reasonable explanation for the delay, the GAO will return to the Task Force to request further exercise of the Committee's authority in order to allow GAO to obtain any and all information it needs to discharge its responsibilities to the U.S. House of Representatives.

The Task Force looks forward to resolving this election contest and is appreciative of your valuable help.

Sincerely,



Charles A. Gonzalez
Chairman
Task Force on FL-13

ROBERT A. BRADY, PENNSYLVANIA
CHAIRMAN

Congress of the United States

House of Representatives

COMMITTEE ON HOUSE ADMINISTRATION

1309 Longworth House Office Building

Washington, D.C. 20515-6137

(202) 225-2061

www.house.gov/cha

VERNON J. EHLERS, MICHIGAN
RANKING MEMBER

June 15, 2007

VIA U.S. MAIL AND FACESMILE

Kurt S. Browning
Secretary of State
Florida Department of State
R. A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399-0250

Dear Secretary Browning:

Under Article I, Section 5 of the U.S. Constitution, each House of Congress has the express authority to be the judge of the "elections and returns" of its own Members. Pursuant to this Constitutional authority, the Federal Contested Elections Act, Committee rules, and past practice, the Committee on House Administration established a task force to investigate Florida's 13th Congressional District election contest.

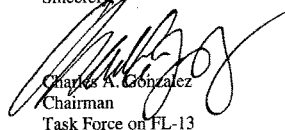
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The Florida Division of Elections has been identified by the GAO as possessing or having access to information and/or items that are necessary to conduct a thorough review and analysis. In that regard, the Task Force respectfully requests your full and timely cooperation. If for any reason you cannot comply with this or any subsequent GAO request, you are instructed to immediately notify Thomas Hicks at Thomas.Hicks@mail.house.gov or (202) 225-2061.

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The Task Force looks forward to resolving this election contest and is appreciative of your valuable help.

Sincerely,



Charles A. Gonzalez
Chairman
Task Force on FL-13

ROBERT A. BRADY, PENNSYLVANIA
CHAIRMAN

Congress of the United States

House of Representatives

COMMITTEE ON HOUSE ADMINISTRATION

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VERNON J. EHLERS, MICHIGAN
RANKING MEMBER

June 15, 2007

VIA U.S. MAIL AND FACESMILE

Amy Tuck
Director of Division of Elections
Department of State, Director's Office
Room 316, R.A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250

Dear Ms. Tuck:

Under Article I, Section 5 of the U.S. Constitution, each House of Congress has the express authority to be the judge of the "elections and returns" of its own Members. Pursuant to this Constitutional authority, the Federal Contested Elections Act, Committee rules, and past practice, the Committee on House Administration established a task force to investigate Florida's 13th Congressional District election contest.

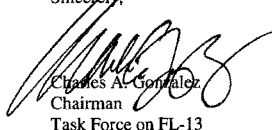
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The Florida Division of Elections has been identified by the GAO as possessing or having access to information and/or items that are necessary to conduct a thorough review and analysis. In that regard, the Task Force respectfully requests your full and timely cooperation. If for any reason you cannot comply with this or any subsequent GAO request, you are instructed to immediately notify Thomas Hicks at Thomas.Hicks@mail.house.gov or (202) 225-2061.

I cannot adequately stress the importance of the timeliness and completeness of your assistance in responding to the GAO. If the GAO does not receive an immediate response, or a reasonable explanation for the delay, the GAO will return to the Task Force to request further exercise of the Committee's authority in order to allow GAO to obtain any and all information it needs to discharge its responsibilities to the U.S. House of Representatives.

The Task Force looks forward to resolving this election contest and is appreciative of your valuable help.

Sincerely,



Charles A. Gonzalez
Chairman
Task Force on FL-13

ROBERT A. BRADY, PENNSYLVANIA
CHAIRMAN

Congress of the United States

House of Representatives
COMMITTEE ON HOUSE ADMINISTRATION
1309 Longworth House Office Building
Washington, D.C. 20515-6157
(202) 225-2061
www.house.gov/cha

VERNON J. EHRLER, MICHIGAN
RANKING MEMBER

June 15, 2007

VIA U.S. MAIL AND FACSIMILE

Aldo Tesi
President & Chief Executive Officer
Election Systems & Software, Inc.
11208 John Galt Blvd.
Omaha, NE 68137 USA

Dear Mr. Tesi:

Under Article I, Section 5 of the U.S. Constitution, each House of Congress has the express authority to be the judge of the "elections and returns" of its own Members. Pursuant to this Constitutional authority, the Federal Contested Elections Act, Committee rules, and past practice, the Committee on House Administration established a task force to investigate Florida's 13th Congressional District election contest.

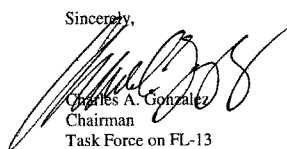
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ES&S has been identified by the GAO as possessing or having access to information and/or items that are necessary to conduct a thorough review and analysis. In that regard, the Task Force respectfully requests your full and timely cooperation. If for any reason you cannot comply with this or any subsequent GAO request, you are instructed to immediately notify Thomas Hicks at Thomas.Hicks@mail.house.gov or (202) 225-2061.

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Sincerely,



Charles A. Gonzalez
Chairman
Task Force on FL-13

ROBERT A. BRADY, PENNSYLVANIA
CHAIRMAN

Congress of the United States

House of Representatives

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VERNON J. ENLERS, MICHIGAN
RANKING MEMBER

June 15, 2007

VIA U.S. MAIL AND FACSIMILE

Dr. Mike Burmester
SAIT Labs, Florida State University
264 James J. Love Building
Florida State University
Tallahassee FL 32306-4530

Dear Dr. Burmester:

Under Article I, Section 5 of the U.S. Constitution, each House of Congress has the express authority to be the judge of the "elections and returns" of its own Members. Pursuant to this Constitutional authority, the Federal Contested Elections Act, Committee rules, and past practice, the Committee on House Administration established a task force to investigate Florida's 13th Congressional District election contest.

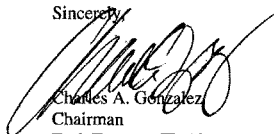
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Florida State University at the Security and Assurance in Information Technology (SAIT) lab has been identified by the GAO as possessing or having access to information and/or items that are necessary to conduct a thorough review and analysis. In that regard, the Task Force respectfully requests your full and timely cooperation. If for any reason you cannot comply with this or any subsequent GAO request, you are instructed to immediately notify Thomas Hicks at Thomas.Hicks@mail.house.gov or (202) 225-2061.

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The Task Force looks forward to resolving this election contest and is appreciative of your valuable help.

Sincerely,



Charles A. Gonzalez
Chairman
Task Force on FL-13

Greenberg Traurig

GLENN T. BURHANS, JR.
ADMITTED IN FL AND NY

TALLAHASSEE
BURHANS@GTLAW.COM

June 22, 2007

BY HAND DELIVERY

The Honorable Charles Gonzalez
Chairman, Task Force on FL-13
Committee on House Administration
United States House of Representatives
1309 Longworth House Office Building
Washington, D.C. 20515-6157

Dear Chairman Gonzalez:

On behalf of Congressman Vern Buchanan we provide the following response to your letter dated June 15, 2007.

1. The Prior Testing Of The Electronic Voting Machines Was Adequate And Confirmed That The Machines Accurately Recorded The Voters' Selections As Presented On The Summary Screens.

The voting machines at issue have undergone extensive testing, certification and analysis -- perhaps more so than any other election system to date. Those machines have conclusively demonstrated the accurate recording of the votes cast at every phase.¹ Such testing included:

- Pre-purchase testing and certification conducted by duly authorized elections officials of the State of Florida in accordance with Florida law;
- Pre-election logic and accuracy testing conducted by duly authorize elections officials as required by Florida law;
- Post-election auditing, which included:
 - parallel testing conducted by duly authorized elections officials in accordance with Florida law; and

¹ For a more detailed discussion of these issues, the Chairman is respectfully directed to Congressman Buchanan's *Motion to Dismiss*, dated January 19, 2007, pp. 7-10, 11-13, and *Status Conference Memorandum*, dated April 13, 2007, pp. 7-12.

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Hon. Charles Gonzalez
 June 22, 2007
 Page 2

- an extensive source code audit conducted by a team of independent, nationally recognized experts retained by the State of Florida in accordance with Florida law.

2. Additional Testing Is Not Necessary

After conducting hundreds of hours of manual code review, the eight independent experts concluded: “*The team’s unanimous opinion is that the iVotronic firmware, including faults that we identified, did not cause or contribute to the CD 13 undervote.*” Supp. App., Tab 2, Report, p. 3 (emphasis in the original).² With respect to the malfunction theory posited by the Contestant, the team unequivocally stated: “We are confident that no iVotronic firmware bug contributed to the CD 13 undervote.” *Id.*, SAIT Report p. 53.

The post-election Audit Report, conducted and prepared in accordance with Florida law, concluded:

The audit team found no evidence to suggest or conclude that the official certified election results did not reflect the actual votes cast. The audit team also found no evidence of election procedural error, no evidence of unapproved or unauthorized software/firmware installation, manipulation or alternation, no evidence of machine malfunction, and no evidence of elections’ staff misconduct that could have contributed to the higher than expected under-vote reported in the U.S. Congressional District 13 race.

Supp. App. Tab 1, Audit Report, p. 3 (emphasis added).

As discussed above the pre-purchase testing and certification, pre-election logic and accuracy testing, and the post-election audit were conducted in accordance with Florida law by duly appointed elections officials and/or independent, nationally recognized experts. Seven months have passed since the election and there has been no showing that any of the above-described tests and certifications were not completed lawfully and in the good faith execution of official duties, nor that they are the result of bias, negligence, or malfeasance. Similarly, there has been no showing that any of the testing and certifications were insufficient in achieving their designed purpose, *i.e.*, to determine whether the voting machines accurately record each vote cast. Absent such a showing, the testing, certification and election-management actions of the Florida

² “Supp App.” refers to Congressman Buchanan’s *Supplemental Appendix in Support of Motion to Dismiss*, filed April 6, 2007.

Hon. Charles Gonzalez
 June 22, 2007
 Page 3

elections officials -- as well as the certified election result -- are entitled to deference by this Body. See, e.g., Deschler, Ch. 9 §§ 57.3, 59.1 (discussing *Oliver v. Hale*, H.R. REP. NO. 85-2482 (1958) and *Roush v. Chambers*, H.R. REP. NO. 87-513 (1961)). Accordingly, no additional testing is necessary.

3. Protocols For Additional Testing

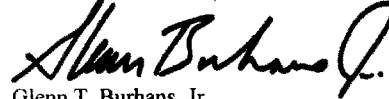
Additional testing, if any, should be no less independent than that conducted by the State of Florida and its independent experts. Such testing should only be conducted by a team of non-partisan, highly trained experts from all required disciplines (e.g., electronic voting technology, computer/information security, computer architecture, etc.). Those experts must exercise their duties here using scientifically reliable techniques and in accordance with the best practices and standards requisite of their respective fields of expertise.

While the parties should be given access to monitor each phase and all proceedings of the testing, the independent expert team must remain free from any external influences. Lastly, any additional testing should focus on the specific issue here -- an alleged machine malfunction that caused a sufficient number of votes for the Contestant not to be counted such that the election result would have been different.

Thank you for the opportunity to address the Committee on these important issues.

Respectfully,

GREENBERG TRAURIG, P.A.



Glenn T. Burhans, Jr.
 Hayden Dempsey
 Seann Frazier

Counsel for Congressman Vern Buchanan

cc: Kendall Coffey via facsimile
 Sam Hirsch via facsimile
 Mark Herron via facsimile

JENNER & BLOCK

June 22, 2007

VIA HAND DELIVERY

United States House of Representatives
 Committee on House Administration
 Task Force on Florida-13
 1309 Longworth House Office Building
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 shirsch@jenner.com

Dear Chairman Gonzalez, Congresswoman Lofgren, and Congressman McCarthy:

In response to your letter of June 15, 2007, we are hereby submitting our comments on the Engagement Plan prepared by the United States Government Accountability Office (GAO).

As you know from our prior submissions — especially our April 13, 2007 Memorandum with Exhibits and Appendices — Ms. Jennings strongly believes that the prior tests of Sarasota County's iVotronic paperless touchscreen voting system were deeply flawed and that additional tests are needed.

We recognize that the central purpose of a Federal Contested Elections Act suit is to ensure that the will of the majority is respected and that the people of the congressional district in question are represented in the House by the candidate of their choice. Here, the political-science and statistical experts for both sides in the state-court litigation agreed that the great bulk of Sarasota County's 18,000 undervotes were unintended and that, had those voters' intended votes been properly counted, Ms. Jennings would have won the election by about 3,000 votes. Arguably, those facts alone should resolve this election contest.

But there is more at stake here than who won or lost; it is critically important for the people of Florida's Thirteenth District, and of the entire Nation, to learn once and for all precisely what went wrong in this election. None of the testing to date has been able to explain the problems experienced and reported by thousands of voters, poll workers, and poll watchers in the District. Therefore, although the ultimate question of which candidate truly won majority support in this election should no longer be in doubt, additional tests of the iVotronic system, to determine precisely why the majority's will has, to date, been frustrated, are very much needed.

The key question to be answered is not *whether* democracy failed the people of Florida's Thirteenth Congressional District, but *why*. Moreover, this case is not about just *one*

June 22, 2007
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election; it is about whether *all* Americans will have fair and accurate elections at this critical juncture in our country's history.

Given the inadequacies in the prior tests that we have already described in great detail in our prior submissions, we fully expect GAO to conclude that additional tests must be conducted. We therefore turn directly to the final question that we have been asked to address: In conducting additional tests to determine the iVotronic system's contribution to Sarasota County's undervote, what test environment and test protocols should be used, and what resources will be needed?

Resources Needed for Additional Testing

Gathering the right resources is critically important to accomplishing GAO's ultimate objectives. As we explained in detail in our April 13 Memorandum, the failure to gather the right resources under one roof and then subject them to testing by one unified team has crippled the tests previously conducted by Florida's election officials. At the risk of oversimplifying, the problem was this: Those who tested the hardware didn't have access to the software, and those who tested the software didn't have access to the hardware. That error must now be rectified.

Exhibit D to our April 13 Memorandum provides a detailed list of the 18 specific items — hardware, software, and documentation — needed to conduct a comprehensive, balanced, and speedy investigation into this contested election. For your convenience, we have attached a copy of that Appendix to this letter. (The specific quantities for most items listed in Exhibit D can be reduced by two-thirds, since items would now be delivered solely to GAO and not to the parties.) Basically, the items fall into three broad categories.

First, the County must provide at least 20 iVotronic machines that Sarasota County voters actually used in the 2006 general election and related items (including PEBs, compact flash cards, and the election-specific ballot-definition files programmed by the County). Most, but not all, of these machines should come from high-undervote precincts. These items have been kept under seal and sequestered in a warehouse in Sarasota pursuant to a February 21, 2007 state-court order to which all parties consented. **Because the County or State plans to sell some or all of these items at some point, the Task Force should not rely solely on the state-court order but rather should actively take steps now — and should not wait until the GAO has presented its initial findings later this summer — to ensure that these items remain under seal, safeguarded for eventual testing by GAO.**

Second, the State must provide the source code and binary software images allegedly used in Sarasota County's iVotronic machines. This source code is the same code that

June 22, 2007
Page 3

the State already provided to the contractors who conducted the source-code review at Florida State University's Security and Assurance in Information Technology laboratory (SAIT).

Third, the machines' manufacturer, Elections Systems & Software, Inc. (ES&S) must provide documentation for the hardware and software, as well as copies of the iVotronic software-version repository, the iVotronic bug-tracking database, and the build environment actually used by the iVotronic system's developers. ES&S could readily load all of these items onto a single computer and deliver it to GAO.

Gathering these materials should take days, not weeks or months, if — and this may be a big “if” — the County, the State, and ES&S give the GAO their full, prompt, and voluntary cooperation, as the Task Force has requested.

Protocols for Additional Testing

Once GAO has gathered these materials, the question of how to conduct the tests comes to the fore. Unfortunately, debugging a computer system is usually not a linear process, as defects often are triggered by the confluence of multiple inputs. (For more details, see the paper by Professors Dan Wallach and David Dill that was attached to the April 13 Memorandum as Exhibit A.)

Investigating allegations of computer malfunction is an interactive process. When a piece of source code looks questionable, an expert can use one of the iVotronic machines from Sarasota County to observe how that source-code command might manifest itself. Conversely, if an iVotronic machine exhibits anomalous behavior, an expert can look to the part of the source code where that behavior is coded to see what the problem might be. A GAO team member's discovery of an anomaly in one part of the system may lead the GAO team to target another part of the system that otherwise might have gone unexamined. That, after all, is the whole point of placing both the hardware and the software under the control of one unified testing team. Indeed, computer scientists routinely distinguish simple “static” software reviews, such as reading source code without ever seeing how it executes on actual hardware (*e.g.*, SAIT's static source-code review), from more rigorous “dynamic” testing that examines how different parts of the software manifest themselves when executed on the actual hardware.

Because much of the dynamic testing of the iVotronic system will be a process of trial and error as the experts work through the various interactions among the voters, the hardware, and the software, it is not possible to identify *a priori* exactly which tests GAO's experts will need to perform. But certain minimum requirements can be identified, and we have done so in the following list.

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Page 4

Therefore, the following list represents key aspects of a comprehensive investigation, not a chronological list of “steps.” Although we have organized the list below under subheadings for the readers’ convenience, in actual practice GAO must avoid replicating the key error of the State’s audit: compartmentalizing its investigation by erecting artificial “walls” between different parts of the testing regime. Ultimately, erecting those walls will only retard the discovery of what really went wrong with the iVotronic system.

With these principles in mind, here are the minimum requirements for any comprehensive investigation into the iVotronic system’s contribution to Sarasota County’s undervote — with a special emphasis on areas that were inadequately tested, or not tested at all, by the State:

Zeroing in on Problems Already Known to ES&S

To expedite and target the GAO investigation, GAO should review ES&S’s bug-tracking or issue-tracking databases for all software versions of the iVotronic system, to find potential clues about what may have contributed to Sarasota County’s large undervote. For example, the smoothing-filter bug should be recorded in these databases.

To expedite and target the GAO investigation, GAO should review ES&S’s software-version repositories containing earlier and later versions of the iVotronic software, to find potential clues about what may have contributed to Sarasota County’s large undervote. For example, iVotronic version 8.0.1.2, which was used by Sarasota County in the 2006 general election and which has the smoothing-filter bug, should be compared with earlier and later versions of the iVotronic software that do not have the smoothing-filter bug.

When examining ES&S’s databases of reported problems with software and hardware, and ES&S’s software-version repositories tracking the design changes made to respond to these problems, GAO should pay particularly close attention to aspects of the iVotronic system that have exhibited problems repeatedly and to software bugs that ES&S repaired in versions of the iVotronic software subsequent to the version that Sarasota County used (version 8.0.1.2).

Miscalibration and Smoothing-Filter/Response-Time Issues

GAO’s additional testing should focus on the specific problems reported in the sworn affidavits and e-mail and fax complaints submitted by voters; the Election Day “Zone Tech Log Sheets” completed by Sarasota County technicians; the Incident Report Forms from the Sarasota County Supervisor of Elections’ office; the Incident Report Forms from the Jennings campaign; and the Poll Watcher Incident Report Forms. Hundreds of these reports can be found in the two-volume “Documentation of Voting Machine Malfunction Appendix” that Ms. Jennings submitted to the Task Force on April 13, 2007;

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Page 5

and they are indexed in Exhibit F to the April 13 Memorandum. To the extent that additional information is needed from county election officials and workers, including the election supervisor's IT staff, GAO investigators should interview or depose them.

GAO should test whether hurriedly or sloppily conducting the "clearing and testing" of each iVotronic machine prior to Election Day, including the recalibration of the touchscreens, could have contributed to Sarasota County's large undervote. As MIT Professor Charles Stewart has conclusively shown, the date when an iVotronic machine was "cleared and tested" by Sarasota County election workers or their contractors (as reflected by "Event Code 01" in the machine's audit log) correlated strongly with the machine's congressional undervote rate. Machines prepared in the final days before the deadline for completing all such preparations exhibited higher congressional undervote rates. And machines "cleared and tested" on dates when the County's staff or consultants were busiest, clearing and testing more machines in a single day, also exhibited higher congressional undervote rates.

GAO should test whether crowding a large number of contests or a large number of candidates onto a single ballot screen (for example, placing two congressional candidates and seven gubernatorial selections on Page 2 of the 2006 Sarasota County ballot) reduces the size of the "zone" that a voter must press in order to select his or her preferred candidate, increases the potential significance of any touchscreen miscalibration, creates a problematic interaction between the election-specific ballot-definition file and the generic source code contained in all iVotronic machines, inadvertently invokes the source-code commands that should apply only to multi-page races, and/or triggers other bugs or defects in the iVotronic system.

GAO should test for potential interactions between human error and machine error, such as problems with miscalibration, touchscreen response times, and multiple simultaneous touchscreen contacts. GAO should test whether calibration is thrown off when a voter rests one hand on the screen while pressing vote selections with the other hand.

GAO should test Sarasota County's iVotronic touchscreens to determine how accurately they were calibrated. Comparing machines from the same precinct, GAO should determine whether the inaccuracy of a machine's calibration correlates with the percentage of congressional ballots recorded as undervotes on that machine.

GAO should examine the source code to better understand how the calibration process works internally, how finger presses are converted to coordinates, and what consequences there might be if an iVotronic machine is poorly calibrated.

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Page 6

GAO should deliberately miscalibrate some iVotronic machines, and then videotape and analyze the behavior of a variety of test voters using those miscalibrated machines with a standard 2006 Sarasota County ballot.

GAO should systematically test for interface timing problems. For example, try touching different zones on different ballot screens for various lengths of time to study the delays imposed by the smoothing filter, and note whether those delays vary with voter demographics, voter behavior, ballot design, touchscreen calibration, or other factors.

GAO should analyze the software that performs the smoothing filter to better understand its defects and to determine how it might interact with other parts of the iVotronic software in an unexpected fashion.

GAO should determine why the effects of the defective smoothing filter are non-deterministic, varying from machine to machine, from voter to voter, and from ballot screen to ballot screen.

GAO should focus on any observed non-deterministic behavior by the machines, including the sometimes delayed touchscreen response times apparently triggered by the faulty smoothing filter, as well as the various specific programming practices that may lead to non-deterministic behavior and that were identified in the redacted or unredacted appendices to the SAIT report.

Firmware-Compiling and Build-Environment Issues

GAO should test whether the tools used to build the (machine readable) executable firmware image from the (human readable) source code worked correctly, complied with the ANSI C programming language standard, and had no bugs or unexpected behavior.

GAO should reconstruct the executable firmware image, to ensure that the firmware compilation environment worked correctly.

GAO should test whether the firmware image provided to GAO is the same as the firmware image provided to the SAIT team.

GAO should test whether the source code provided to GAO is the same as the source code provided to the SAIT team.

GAO should test whether the software used on Sarasota County's iVotronic machines was generated from the same source code that was provided to GAO and to the SAIT team.

June 22, 2007

Page 7

GAO should test whether the software present on the internal EPROM (erasable programmable read-only memory) of Sarasota County's iVotronic machines was the software originally certified.

GAO should test whether the firmware image provided to GAO and to the SAIT team was compiled correctly from the source code provided to GAO and to the SAIT team.

GAO should test whether the firmware image provided to GAO and to the SAIT team was the firmware image that actually was executed by the iVotronic machines in Sarasota County on Election Day.

If the source code does not correspond to the compiled executable firmware image, GAO should test for indications of potential malicious attacks.

GAO should examine the actual machine code generated by the compiler to see whether the asynchronously updated global variables that were not declared to be volatile may have led the compiler to perform unsafe optimizations on these variables (*e.g.*, suppression of apparently redundant load and store operations).

GAO should instrument the source code to artificially induce a variety of failures while the system is running, to determine whether these failures might have contributed to Sarasota County's large undervote. Such changes might include deliberately changing the global variables or emulating software interrupts and other non-deterministic effects.

GAO should instrument the source program to print or log interesting events, to improve the understanding of the progression of events that occur as the code executes.

GAO should instrument the code to carefully study the interaction between the code and the hardware, possibly detecting flaws in the hardware itself.

In addition to compiling and executing the software on iVotronic hardware, GAO should extract portions of the software from the main application (*e.g.*, the portions dealing with touchscreen calibration) and then execute those portions in a "test harness" where their behavior can be studied systematically.

GAO should execute the iVotronic software using debugging or simulation tools.

"Commercial Off-the-Shelf" Component Issues

GAO should test the iVotronic system's "commercial off-the-shelf" components, including the microprocessor, the various controller chips, and the software drivers, especially the software driver for the touchscreen.

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Security, Virus-Vulnerability, and Malicious-Code Issues

GAO should test vulnerabilities, including but not limited to those identified in the redacted or unredacted appendices to the SAIT report, that could allow for the creation of a voting-machine virus that might spread from one voting machine to another machine, via the PEBs (personal electronic ballots) or otherwise. GAO should examine the actual iVotronic machines, PEBs, and compact-flash cards for evidence of such an attack.

Using commercial tools developed to identify and repair such problems, GAO should detect whether buffer-overflow problems or array out-of-bounds errors or integer-overflow vulnerabilities or other security holes may have manifested themselves in Sarasota County's 2006 general election.

GAO should test the bugs described in the SAIT report's redacted or unredacted appendices, to determine independently whether these bugs might have contributed to Sarasota County's large undervote.

Other Memory and Hardware Issues

GAO should test whether prematurely removing compact-flash cards when closing the polls (as reportedly happened with many iVotronic machines in North Port) alters the votes recorded in memory. See Todd Ruger, "Dent Explains Why Election Results Were Delayed," *Sarasota Herald-Tribune*, Nov. 9, 2006.

GAO should test whether leaving the external communications pack attached during the election affects how votes are recorded in memory.

GAO should test whether the touchscreen controllers and programmable interrupt controllers (PICs) can fail without the failure being immediately detected.

Mock Elections (or "Parallel" Testing)

GAO should conduct additional mock elections (or "parallel tests," as they sometimes have been mistakenly called) to replicate, as closely as possible, actual Election Day conditions. Specifically:

- use a large enough sample of Sarasota County's iVotronic machines and cast a large enough number of mock voters and mock votes to render the results statistically significant;
- mount the iVotronic touchscreen machines horizontally, on their normal, ES&S-provided stands, rather than hanging them vertically on a wall, which minimizes the chance that a mock voter would touch two or more parts of the screen

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simultaneously or would touch the screen at a point slightly off-center from his or her intended target;

- include in the mock election some of the touchscreens that were not well calibrated;
- use a broad and representative sample of mock voters (including senior citizens and retirees) who have no conflicts of interest, rather than a small group drawn from current employees of the Florida Division of Elections;
- use a large enough sample of mock voters that they do not all become “experts” in how to efficiently input their selections on the iVotronic machines;
- in addition to the “non-expert” mock voters, also allow the computer scientists and engineers involved in the software review to cast mock votes on machines actually used in Sarasota County’s 2006 general election;
- have some of the mock voters input their vote selections rapidly, rather than having all of them proceed slowly and deliberately;
- ask some of the mock voters deliberately to try to “confuse” the machines;
- ask some of the mock voters deliberately to press the screen at different angles;
- script some, but not all, of the vote patterns;
- do not limit the mock voters to using unnatural “vote patterns,” such as the ten patterns listed on page 5 of the State’s December 18, 2006 “Parallel Test Summary Report”;
- test vote patterns that start with an initial congressional selection of Mr. Buchanan, rather than always starting with an initial selection of Ms. Jennings or of neither candidate; and
- test various touch patterns not only for the ballot’s congressional contest, but also for other contests on the ballot.

GAO should videotape and analyze all anomalies in the voting machines’ behavior, including:

- vote selections not registering the first time the screen is touched;
- inconsistencies in the amount of time required to touch the screen or the amount of pressure needed before a touch registers;
- initial vote selections not being accurately presented on the review screens; and
- vote selections presented on the review screens not being accurately recorded in the machines’ memory.

We are confident that if GAO acquires the resources and conducts the tests described above, the House of Representatives and the American people finally will learn precisely how Sarasota County’s iVotronic machines frustrated the will of the majority in Florida’s Thirteenth Congressional District.

June 22, 2007
Page 10

Lastly, we want to thank the Committee, the Task Force, and the GAO for proceeding expeditiously with this investigation. We were, frankly, stunned and disappointed to see Mr. Buchanan's representative referring to this congressional investigation, in supposed contrast with the state-court litigation, as "*purely politics*." See "Court Denies Jennings Access to Voting Machine Code," *Bradenton (Fla.) Herald*, June 19, 2007 (quoting Mr. Buchanan's attorney). We reject that characterization entirely and will do everything in our power to fully and promptly cooperate with the GAO as it moves forward with this critically important, independent investigation.

Please do not hesitate to contact us, or to directly contact our lead computer-science expert Professor Dan Wallach (who is currently at Stanford University), if we can be of any further assistance.

Sincerely,



Sam Hirsch
Counsel for Ms. Jennings



Kendall Coffey
Counsel for Ms. Jennings

cc: Mr. Hayden R. Dempsey, counsel for Mr. Buchanan

LIST OF PROPOSED ITEMS FOR PANEL SUBPOENAS
[EXHIBIT D TO MS. JENNINGS'S APRIL 13, 2007 MEMORANDUM]

The following items are needed to conduct a comprehensive, balanced, and speedy investigation into this contested election. After each item, the entities that are believed to possess the item and therefore could be subpoenaed for the item are indicated in square brackets, using the following abbreviations: *C* for the Sarasota County Supervisor of Elections' Office in Sarasota, Florida; *S* for the Florida Department of State (and its Division of Elections) in Tallahassee, Florida; and *E* for Election Systems & Software, Inc. ("ES&S"), in Omaha, Nebraska. The numbers of items specified below would allow the subpoenaed materials to be divided into three equivalent sets and then distributed among the Panel, Ms. Jennings's expert team, and Mr. Buchanan's expert team.

1. Sixty (60) of the ES&S "iVotronic machines" used in the November 2006 election in Sarasota County and referred to in Paragraph 1-A of the Stipulation Agreement that Florida Circuit Judge William L. Gary approved on February 21, 2007 [hereinafter "the Stipulation Agreement"], along with the carrying cases, power adaptors, and other apparatus to set up the voting booths for these iVotronic machines. The Panel will select the 60 iVotronic machines, by serial number, from the list of iVotronic machines attached to the Stipulation Agreement as "Exhibit A." [C]
2. One hundred and twenty (120) of the ES&S personal electronic ballots ("PEBs") used in the November 2006 election in Sarasota County and referred to in Paragraphs 1-A and 1-D of the Stipulation Agreement. The Panel will select the 120 PEBs, by serial number, from the list of PEBs attached to the Stipulation Agreement as "Exhibit B." [C]
3. Sixty (60) of the ES&S Master PEBs and all twelve (12) ES&S Qualification PEBs used in the November 2006 election in Sarasota County. [C]
4. All "[compact] 'flash cards'" referred to in Paragraph 1-A of the Stipulation Agreement and used in the November 2006 election in Sarasota County in connection with the 60 iVotronic machines specified above, in Paragraph 1 of this list. [C]
5. Three full copies, delivered in electronic form on CD-ROMs, of all "software" referred to in Paragraph 1-A of the Stipulation Agreement and used in the November 2006 election in Sarasota County in connection with the 60 iVotronic machines specified above, in Paragraph 1 of this list. [C]
6. All "hard drives" referred to in Paragraph 1-C of the Stipulation Agreement (except for the "new hard drives for the March 2007 Election"), plus two complete bit-for-bit copies of each of those hard drives, along with the passwords and other information needed to read them. (The

Panel could keep the original hard drives and distribute the copies to the two parties' expert teams.) [C]

7. Three complete bit-for-bit copies of the "back-up of all information on the server used to collect and store the votes" in the November 2006 election in Sarasota County, referred to in Paragraph 1-C of the Stipulation Agreement, along with the passwords and other information needed to read the backed-up information. [C]

8. Three standard ES&S Communications Packs (containing three thermal printers and all necessary cabling). [C]

9. Three PEB readers/serial port interfaces for transferring data from an ES&S PEB to a standard personal computer. [C]

10. Three full copies, in electronic form, of all files that were loaded onto any or all of the 60 iVotronic machines (specified above, in Paragraph 1 of this list) and/or onto any or all of the PEBs (specified above, in Paragraphs 2 and 3 of this list) as part of the "ballot programming" or "ballot definition" or "election generation" process, for early voting and/or for Election Day voting, including but not limited to ballot-definition files and audio files, for the November 2006 election in Sarasota County. [C, S]

11. Three full copies of all items (including but not limited to software and documentation) that were provided to the Florida State University-SAIT team to assist the team in producing the report entitled "Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware," issued by the Florida Department of State on February 23, 2007. [C, S, E]

12. Three full copies of the unredacted Appendices E, F, and G to the report entitled "Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware," issued by the Florida Department of State on February 23, 2007. [S]

13. Three full copies of all items (including but not limited to software and documentation) that were provided to the team that produced the report entitled "Audit Report of the Elections Systems and Software, Inc.'s iVotronic Voting System in the 2006 General Election for Sarasota County, Florida," issued by the Florida Department of State on February 23, 2007. [C, S, E]

14. Three full copies of all ES&S source code and binary software images to the iVotronic system, the PEBs, and the Unity election-management system, used in the November 2006 election in Sarasota County, in the same electronic form that ES&S's developers use. [S, E]

15. Three full copies, in electronic form, of all documentation and technical documents packages for the ES&S products and source code specified above, in Paragraph 14 of this list, including but not limited to all user manuals, operator manuals, training materials, and other documentation related to the use, operation, or maintenance of any part of ES&S's iVotronic system, ES&S's Unity system or any of its elements, and ES&S's PEBs, that were used in the November 2006 election in Sarasota County. [C, S, E]

16. Three full copies of all documentation and tools necessary to extract and read the “three redundant memories” contained within each ES&S iVotronic machine used in the November 2006 election in Sarasota County. [C, S, E]

17. Three computers loaded with the entire ES&S Unity system used in the November 2006 election in Sarasota County fully installed, along with the passwords and other information needed to operate the installed software. Each computer’s hardware configuration (including memory and hard-disk size) should meet or exceed the specifications of the computer that the Sarasota County Supervisor of Elections’ Office used in November 2006 to run the ES&S Unity system. [E]

18. Three computers loaded with the following software and data fully installed, along with the passwords and other information needed to operate them:

- full copies of all source code to “all software versions” (that is, ES&S’s complete software version repository, regardless of whether the versions were used in Sarasota County or elsewhere) of ES&S’s iVotronic and Unity systems since January 1, 2000 (whether or not they have been submitted to an “independent testing authority” and/or to the Florida Division of Elections’ Bureau of Voting Systems Certification), and instructions for how to retrieve, and determine the date of, each of the software versions in this repository;
- full copies of the build environment actually used by ES&S’s developers to create, debug, test, and ultimately ship distributions of all software versions of ES&S’s iVotronic and Unity systems since January 1, 2000; and
- full copies of ES&S’s bug-tracking or issue-tracking database for all software versions of ES&S’s iVotronic and Unity systems since January 1, 2000. [E]

JUN-27-2007 04:58PM From: HON CHARLES GONZALEZ

202-225-1815

T-854

P.002/003 F-854

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NATURAL RESOURCES

ASSISTANT REPUBLICAN WHIP

June 27, 2007

The Honorable Charles A. Gonzalez
303 Cannon House Office Building
Washington, DC 20515

Dear Chairman Gonzalez:

As you may be aware, media reports indicate an escalating sense that Christine Jennings' continuing challenge to the November 2006 election for Florida's 13th Congressional District may be losing momentum and that in fact, a concession from Jennings may soon be at hand. Enclosed are several articles from those papers whose titles are telling, including, "Jennings to Weigh Options, Dems Hope for a Rematch," "Deplorable Delay in District 13; GAO Should Seek the Truth, but Jennings Should Concede," and, "Jennings Steps Back, Considers D-13 Rematch."

Following the recent First District Court of Appeals ruling in Florida that upheld an earlier court's ruling to continue to protect the proprietary source code for the electronic voting machines used in the November 2006 election, Ms. Jennings herself seems to have taken a step back to re-evaluate her options. According to an article in the Bradenton Herald, Ms. Jennings is apparently reacting to the court's decision by deciding to "spend some time away with family and friends and begin focusing on the future," and that she will "announce [her] future political plans shortly."

If Ms. Jennings herself senses that it is time to take a step back and evaluate her next steps, it seems reasonable that the Florida-13 Task Force do the same. At our request, the Government Accountability Office (GAO) is currently engaged in a comprehensive study of the administration of FL-13 election. The Task Force unanimously supported the engagement of the GAO in this matter to assist the panel in determining the facts surrounding the conduct of the election that Ms. Jennings has contested. However, if they do report back to us in September, as they have forecast, the study will have taken nearly five months to complete, and may have a total price tag that exceeds \$1 million, paid for by the American public. Should that study have no material impact on this race, we, as Members of this panel, must explain to taxpayers why we continued to spend their money, despite several clear signs that the challenger in this

Jun-27-2007 04:58pm From: HON CHARLES GONZALEZ

202-225-1915

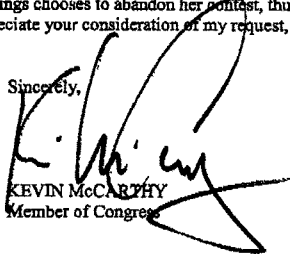
T-664 P.003/003 F-954

contest is re-evaluating whether or not she wishes to continue to protest the results of this election.

Should Ms. Jennings decide to heed the growing call in her district to concede the election, thus effectively withdrawing her contest here in the House, we need to know, as a Task Force, how we plan to proceed in regard to the GAO study to assure that scarce GAO resources (both human and financial) are utilized appropriately.

I would ask that as the GAO continues its work, the Florida-13 Task Force, with some expediency, prepare a contingency plan that would limit the cost to taxpayers of this effort in the event that Ms. Jennings chooses to abandon her contest, thus rendering its existence somewhat moot. I appreciate your consideration of my request, and I look forward to receiving your response.

Sincerely,



KEVIN MCCARTHY
Member of Congress

Cc: The Honorable Zoe Lofgren
The Honorable Dan Lungren

ROBERT A. BRADY, PENNSYLVANIA
CHAIRMAN

Congress of the United States

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VERNON J. EHRLER, MICHIGAN
RANKING MEMBER

June 28, 2007

The Honorable Kevin McCarthy
United States House of Representatives
1523 Longworth House Office Building
Washington, D.C. 20515

Dear Kevin:

Thank you for your letter dated June 27, 2007. In response, I believe as long as there is a Notice of Contest pending before the Committee on House Administration, the Task Force will proceed as planned. For the Task Force to entertain a "contingency plan" predicated on an event that may or may not occur could be interpreted as a comment on the propriety of the Notice of Contest. In addition, premature action may negatively impact the momentum required to timely dispose of the matter before us.

I appreciate your interest, but the requested action based merely on speculation would be premature. I look forward to continuing our work together.

Sincerely,



Charlie Gonzalez
Member of Congress

cc: The Honorable Zoe Lofgren
The Honorable Dan Lungren

MEETING TO DISCUSS THE STATUS OF THE
INVESTIGATION INTO THE FL-13 CONGRES-
SIONAL DISTRICT ELECTION

MEETING
BEFORE THE
COMMITTEE ON HOUSE
ADMINISTRATION
TASK FORCE FOR THE CONTESTED ELECTION IN
THE 13TH CONGRESSIONAL DISTRICT OF FLORIDA
HOUSE OF REPRESENTATIVES
ONE HUNDRED TENTH CONGRESS
FIRST SESSION

MEETING HELD IN WASHINGTON, DC, AUGUST 3, 2007

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GAO

United States Government Accountability Office**Statement****Before the Task Force on Florida-13,
Committee on House Administration,
House of Representatives**

For Release on Delivery
Expected at 10:00 a.m. EDT
Friday, August 3, 2007

ELECTIONS**Status of GAO's Review of
Voting Equipment Used in
Florida's 13th
Congressional District**

Statement of Dr. Nabajyoti Barkakati
Senior-Level Technologist
Center for Technology and Engineering
Applied Research and Methods

**GAO-07-1167T**

Chairman Gonzalez, Ms. Lofgren, Mr. McCarthy,

I am pleased to appear before the Task Force today to update you on the progress of our review of voting equipment used in Florida's 13th Congressional District, which we are conducting in response to your request of May 25, 2007. I want to thank the Task Force for its continued support of our efforts. We have accomplished a lot in the past few weeks, but we still have several work items to complete before we can formally draw any conclusions.

In November 2006, about 18,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District.¹ Following the contesting of the election results in the House of Representatives, the Task Force met and unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. On June 14, 2007, we met with the Task Force and agreed upon an engagement plan, which included the following review objectives: (1) What voting systems and equipment were used in Sarasota County and what processes governed their use? (2) What was the scope of the undervote in Sarasota County in the general election? (3) To what extent were tests conducted on the voting systems in Sarasota County prior to the general election and what were the results of those tests? and (4) Considering the tests that were conducted on the voting systems from Sarasota County after the general election, are additional tests needed to determine whether the voting systems contributed to the undervote?

To conduct our work, we visited Sarasota County twice, most recently 2 weeks ago, and we were in Tallahassee last week to meet with the Secretary of State and the Division of Elections. While in Tallahassee, we were able to execute a nondisclosure agreement that permitted us access to items that the State of Florida and the manufacturer of the voting system, Election Systems and Software (ES&S), considered proprietary, including the proprietary appendixes of the Florida State University source code review report; the technical data package, which includes items such as the software specification; and the source code for the firmware installed in the iVotronic touchscreen voting systems used in Sarasota County. We are currently working on a separate nondisclosure agreement to access technical and testing information from ES&S directly.

¹ Undervotes are votes for fewer choices than permitted. In this case, it means ballots that did not record a selection for either candidate in the congressional contest.

In our meetings with Sarasota County, we learned the entire process of configuring the election, running the election, and tallying the results, and about the testing the county conducts on the voting systems, such as the logic and accuracy testing. In our meetings with the Division of Elections, we discussed the conduct of certification testing, in particular, the testing conducted on the ES&S system used in Sarasota County, and the conduct of the state audit—how decisions were made to conduct the audit and the processes used to conduct the audit. In addition, we have received and are reviewing and analyzing data and documentation received from both sources, as well as the submissions from the contestant and the contestee provided by the Task Force.

Summary

We have identified the voting systems and equipment used in Sarasota County and verified that the systems were approved for use by the Florida Division of Elections. We know that nine different ballot styles were used on the iVotronic touchscreen voting systems and have an understanding of how the ballots were configured and loaded onto the machines. Further, it was also explained to us how votes are tallied and certified, including the conduct of the machine and manual recounts.

We have been analyzing the detailed ballot results from the election as well as the incident and technician logs from Sarasota County to identify patterns in the undervote. Specifically, we have examined the undervote by machine, precinct, and ballot style. Patterns in the undervote could provide us insight on specific conditions that could have caused the undervote. However, we have not yet noticed any apparent patterns, but we are continuing our analysis. From our analysis, we have been able to verify that 1,499 iVotronic voting systems recorded votes in the 2006 general election and the vote counts for the contestant, contestee, and undervotes match the vote totals for election day, early voting, and provisional ballots in the Florida-13 race. A total of 17,846 undervotes were recorded in the Florida-13 race out of the 119,919 ballots cast using the iVotronic voting systems—corresponding to a 14.88 percent undervote rate.²

²Because the absentee ballots were not cast using iVotronic voting systems, we did not verify the absentee ballot counts. When absentee ballots are included, a total of 142,532 ballots were cast and a total of 18,412 undervotes were recorded.

While we have not yet completed our review of all of the testing efforts to determine whether they provide reasonable assurance that the machines properly reflect in their totals the selections made when the ballot is cast, there are some preliminary observations we can make.

A variety of testing is needed to obtain reasonable assurance that this objective is accomplished, including ballot testing, load testing, and environmental testing.³ As agreed with you, our efforts will review the testing that has already been completed, including tests conducted by the State of Florida (certification testing), Sarasota County (logic and accuracy testing), and the equipment manufacturer. We are also reviewing the tests conducted as a part of the state audit, including parallel testing, the examination of Sarasota County's election practices, and the Florida State University source code review. Once we complete our review of the testing efforts, we will identify the potential benefits associated with conducting any additional tests—how they will help us understand whether the system contributed to the undervote issue—and the resources needed to conduct such tests.

So far, we have focused our efforts on two types of tests—ballot testing and load testing. With between 28 and 40 contests on the Sarasota County ballots in the 2006 general election, the number of possible voting combinations is over 100 trillion. Accordingly, it is unrealistic to expect that all possible vote combinations can be tested.

³For the purposes of this review, ballot testing is a subset of the functional testing that focuses on the vote selection and casting functions. This includes testing the different ways in which a voter may make selections on a ballot and then cast a ballot with the iVotronic electronic voter interface. For example, the Florida Voting Systems Standards require the system to allow the user (1) to make a selection for each contest, and (2) to review the selections made and make any changes prior to the vote being cast.

Load testing, for the purposes of this review, is the testing performed to provide reasonable assurance that the voting system can properly handle the expected volume of voters and ballots that are expected. Florida certification tests include a test to verify that a precinct count system, such as the iVotronic, can process at least 9,900 ballots.

According to the Florida Voting System Standards, environmental tests are intended to simulate exposure to shock and vibration associated with handling and transportation and to temperature conditions. For example, voting systems in Florida are to be able to operate in temperature conditions ranging between 40 and 100 degrees Fahrenheit.

We have also examined how the system allowed voters different ways to make a selection in the Florida-13 race and recognized that these represented different ways that the voters could indicate their intent in the race. By taking into account these variations, our analysis has found at least 112 different ways a voter could make his or her selection and cast the ballot in the Florida-13 race, assuming that it was the only race on the ballot. Specifically, a voter could (1) initially select either candidate or neither candidate (i.e. undervote), (2) change the vote on the initial screen, and (3) use a combination of features to change or verify his or her selection by using the page back and review screen options. We found that the Florida certification tests and the Sarasota County logic and accuracy tests verified 3 ways to select a candidate; and the Florida parallel tests verified 10 ways to select a candidate—meaning that of the 112 ways, 13 have been tested. We have not yet assessed whether this is significant.

A test to determine whether a system can handle the expected volume of activity is commonly referred to as load testing. We found that ballots used for load testing during the certification testing were machine-generated using a testing program built into the iVotronic system, i.e., users do not touch the screen to make a selection and cast a ballot. Neither the Florida audit nor Sarasota County's logic and accuracy testing performed load testing. We have not yet assessed whether this is significant.

We have also been reviewing the Florida State University source code review. As we mentioned, we obtained access to the source code last week and we were able to verify for ourselves some of the items discussed in its report. We have had prior discussions with the leader of the Florida State review team and will be continuing our discussions with the review team and the manufacturer to ensure our understanding of both the findings of their review and the operations of the iVotronic system. One of the items noted in the report was that the review team did not (1) convert the source code to object code, and (2) compare the resulting object code to the object code that was used to run the voting machines in Sarasota County.⁴ We are still assessing the significance of this item.

⁴According to the Institute of Electrical and Electronics Engineers, source code contains computer instructions and data definitions expressed in a form suitable for input to an assembler, compiler, or other translator that generates the object code. Object code contains the computer instructions and data definitions expressed in a form that can be recognized by the processing unit of a computer.

As a part of our review of the state audit, we examined the selection of samples for the parallel testing and the review of the Sarasota County election practices. Our preliminary analysis has found that these sample sizes are too small to support generalization of the results to the overall population. For example, the generalization of the results from the use of 10 machines for parallel testing cannot be supported because the sample drawn was not random and the sample size was too small. Similarly, we have little assurance that the examination of 6 machines' firmware is adequate to conclude that the firmware was not compromised on any of the machines. Our discussions with Florida officials indicate that such limitations resulted from court-imposed restrictions on machine access and resource considerations of performing the testing.

It is important to bear in mind that these are just our preliminary observations. It is not clear to us yet whether these are items we think will need to be tested; but they are items we have noticed while we are reviewing the previously completed test activities. As we previously discussed, for any testing issues we identify, we plan to determine how relevant and significant the issue is and the resources needed to conduct such tests. Our identification of resources will include test personnel and equipment, the voting systems and equipment to be tested, and the time required to conduct such tests. For example, as we have discussed, one of the issues we identified in the source code review is that the source code was not converted to object code and compared to ensure that it represented the code used in Sarasota County. Further, our preliminary analysis has shown that we do not have reasonable assurance that the firmware was not compromised on any of the iVotronic systems used during the election. In order to determine whether these issues warrant further testing, we still need to determine the potential significance of these issues, as well as identify the test personnel and equipment, the voting systems and equipment to be tested, and the time required to conduct such tests. To identify these resources, it will also be important to determine how such tests should be structured and executed.

Besides conducting such resource analyses, we still have several activities to complete with regard to testing. First, we have not yet evaluated the testing conducted by the system manufacturer, and second, we are still in the process of identifying other appropriate tests that could be used to determine whether the voting systems caused the undervote (for example, the effects of provisional ballots and environmental conditions).

Mr. Chairman, this completes my prepared statement. I would be happy to respond to any questions you or the other members of the Task Force may have at this time.

For further information about this testimony, please contact Keith Rhodes, Chief Technologist, at (202) 512-6412 or rhodesk@gao.gov, or Naba Barkakati at (202) 512-4499 or barkakatin@gao.gov.

(480692)

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**Official Task Force Meeting
August 3, 2007**

Motion #5 – GAO District Work Period Request

I move that the Chairman be authorized and directed to consult the Task Force by teleconference or other appropriate means to consider any GAO request received during the district work period and determined by the Chairman to require Task Force concurrence. For the purpose of consultation, as described in this motion, all members of the Task Force must be in simultaneous contact. To preserve our open process, any consultation under this motion will be made open to the public and press through teleconference or web technology in the House Administration hearing room. No final disposition of the underlying FL-13 election will be made pursuant to this procedure (offered by Rep. Zoe Lofgren).

Member	Vote
Rep. Gonzalez	Y
Rep. Lofgren	Y
Rep. McCarthy	Y

**GAO BRIEFING ON THE STATUS OF THE
INVESTIGATION INTO THE FL-13 CONGRESSIONAL
DISTRICT ELECTION**

MEETING

BEFORE THE

**COMMITTEE ON HOUSE
ADMINISTRATION**

**TASK FORCE FOR THE CONTESTED ELECTION IN
THE 13TH CONGRESSIONAL DISTRICT OF FLORIDA**

HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

MEETING HELD IN WASHINGTON, DC, OCTOBER 2, 2007

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GAO**United States Government Accountability Office****Statement before the Task Force on
Florida-13, Committee on House
Administration, House of Representatives**

For Release on Delivery
Expected at 4:00 p.m. EDT
Tuesday, October 2, 2007

ELECTIONS

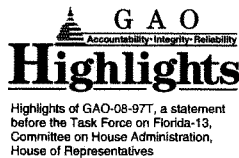
Further Testing Could Provide Increased but Not Absolute Assurance That Voting Systems Did Not Cause Undervotes in Florida's 13th Congressional District

Statement of Dr. Nabajyoti Barkakati
Senior-Level Technologist
Applied Research and Methods



GAO-08-97T

October 2, 2007



Why GAO Did This Study

In November 2006, about 18,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District (FL-13). After the contesting of the election results in the House of Representatives, the task force unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. GAO agreed with the task force on an engagement plan, including the following review objectives:

- (1) What voting systems were used in Sarasota County and what processes governed their use?
- (2) What was the scope of the undervote in Sarasota County in the general election?
- (3) What tests were conducted on the voting systems in Sarasota County prior to the general election and what were the results of those tests?
- (4) Considering the voting systems tests conducted after the general election, are additional tests needed to determine whether the voting systems contributed to the undervote? To conduct its work, GAO met with officials from the State of Florida, Sarasota County, and Election Systems and Software (ES&S)—the voting systems manufacturer—and reviewed voting systems test documentation. GAO analyzed election data to characterize the undervote. On the basis of its assessments of prior testing and other activities, GAO identified potential additional tests for the Sarasota County voting systems.

To view the full product, including the scope and methodology, click on GAO-08-97T. For more information, contact Keith Rhodes at (202) 512-6412 or krhodes@gao.gov, or Naba Barkakati at (202) 512-4499 or barkakatin@gao.gov.

ELECTIONS

Further Testing Could Provide Increased but Not Absolute Assurance That Voting Systems Did Not Cause Undervotes in Florida's 13th Congressional District

What GAO Found

In the 2006 general election, Sarasota County used voting systems manufactured by ES&S, specifically iVotronic direct recording electronic (DRE) voting systems during early and election day voting and the Unity election management system, which handles the election administration functions, such as ballot design and election reporting.

GAO's analysis of the 2006 general election data from Sarasota County did not identify any particular voting machines or machine characteristics that could have caused the large undervote in the FL-13 race. The undervotes in Sarasota County were generally distributed across all machines and precincts.

GAO's analysis found that some of the prior tests and reviews conducted by the State of Florida and Sarasota County provide assurance that certain components of the voting systems in Sarasota County functioned correctly, but they are not enough to provide reasonable assurance that the iVotronic DREs did not contribute to the undervote. Specifically, GAO found that assurance is lacking in three areas, and proposes that tests be conducted to address those areas. First, because there is insufficient assurance that the firmware in all the iVotronic DREs used in the election matched the certified version held by the Florida Division of Elections, GAO proposes that a firmware verification test be conducted on a representative sample of 115 (of the 1,499) machines that were used in the general election. Second, because an insufficient number of ways to select a candidate in the FL-13 race were tested, GAO proposes that a test be conducted to verify all 112 ways that GAO identified to select a candidate. Third, because no prior tests were identified that address the effect of a miscalibrated iVotronic DRE on the undervote, GAO proposes that an iVotronic DRE be deliberately miscalibrated to verify the accurate recording of ballots under these conditions. GAO expects these three tests would take 2 weeks, once the necessary arrangements are made.

Should the task force ask GAO to conduct the proposed tests, several matters would need to be addressed before testing could begin, including obtaining access to the iVotronic DREs that have been subject to a sequestration order, arranging for a test site, obtaining some commercially available test tools, developing test protocols and detailed test procedures, and arranging for the video recording of the tests. Sarasota County election officials have indicated that they can help GAO access the machines and provide a test site between November 26 and December 7, 2007.

Although the proposed tests could help provide increased assurance, they would not provide absolute assurance that the iVotronic DREs did not cause the large undervote in Sarasota County. The successful conduct of the proposed tests could reduce the possibility that the voting systems caused the undervote and shift attention to the possibilities that the undervote was the result of intentional actions by voters or voters that did not properly cast their votes on the voting system.

United States Government Accountability Office

Mr. Chairman and Members of the Task Force:

I am pleased to appear before the task force today to present the findings on our review of voting equipment used in Florida's 13th Congressional District (Florida-13), which we are conducting in response to your request of May 25, 2007.

In November 2006, about 18,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District.¹ Following the contesting of the election results in the House of Representatives, the task force met and unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. On June 14, 2007, we met with the task force and agreed upon an engagement plan, which included the following review objectives: (1) What voting systems and equipment were used in Sarasota County and what processes governed their use? (2) What was the scope of the undervote in Sarasota County in the general election? (3) To what extent were tests conducted on the voting systems in Sarasota County prior to the general election and what were the results of those tests? (4) Considering the tests that were conducted on the voting systems from Sarasota County after the general election, are additional tests needed to determine whether the voting systems contributed to the undervote?

To conduct our work, we met with officials from the Sarasota County Supervisor of Elections, the Florida Department of State and Division of Elections, and Election Systems and Software (ES&S), the manufacturer of the voting systems used in Sarasota County. We reviewed voting system documentation, including standards documents, audit and testing documentation, submissions from the contestant and contestee, and selected Florida election laws and rules. In Sarasota County, election officials demonstrated how the ES&S voting system was used to support the 2006 general election. To determine the scope of the undervote in Sarasota County, we collected election data from the Supervisor of Elections and analyzed it to determine whether the undervote could be attributed to particular voting machines or machine characteristics. Specifically, we examined ballot image logs and event logs from the voting systems and technician and incident reports generated by elections staff

¹Undervotes occur when the number of choices selected by the voter is fewer than the maximum allowed for that contest. In this case, it means ballots that did not record a selection for either candidate in the congressional contest.

from Sarasota County on election day. We also conducted various statistical analyses to characterize the undervote and to identify whether a subset of machines or precincts may have caused the large undervote.

We reviewed test documentation and interviewed officials involved with testing from ES&S, the Florida Division of Elections, and the Sarasota County Supervisor of Elections. To determine the need for additional tests, we also reviewed the tests conducted following the election, including those conducted or sponsored by the Florida Division of Elections, including the parallel testing, the examination of Sarasota County's election procedures and practices, and the source code review conducted at Florida State University's Security and Assurance in Information Technology (SAIT) laboratory. We reviewed the final reports of these tests and also met with the leader of the source code review team. Following the agreement to and execution of a non-disclosure agreement with the Florida Department of State and ES&S, we obtained access to the iVotronic source code and reviewed it to further our understanding of the system and to verify some of the source code review's findings. We analyzed the available information and identified a key set of voting system objectives that, if implemented properly, would provide reasonable assurance that the voting systems did not malfunction and cause the large undervote in Sarasota County. Using these objectives, we used the results of testing previously conducted and assessed the extent to which these key voting system objectives could be met. For those objectives that could not be adequately assured, we assessed the significance of those objectives and identified tests that could be conducted to help try to assure those key voting system objectives were met. For each test, we identified resources that would be required, including time and manpower.

We provided a draft of this report to the Florida Department of State, ES&S, and the Sarasota County Supervisor of Elections for their review and comments. The Florida Department of State and ES&S also conducted a sensitivity review to ensure that business proprietary information is not disclosed in this statement.

We conducted our work from June to September 2007 in Washington, D.C.; Tallahassee and Sarasota, Florida; and Omaha, Nebraska.

Results in Brief

In the 2006 general election, Sarasota County used voting systems manufactured by ES&S, specifically iVotronic direct recording electronic (DRE) voting systems during early and election day voting and the Unity

election management system, which handles the election administration functions, such as ballot design and election reporting.

Our independent analysis of the 2006 general election data from Sarasota County confirmed the large undervote in the race for Florida's 13th Congressional District, but did not identify any particular voting machines or machine characteristics that could have caused the large undervote in the election. The undervotes in Sarasota County for the congressional race were generally distributed across all machines and precincts.

We found that some of the prior tests and reviews provide assurance that the voting systems in Sarasota County functioned correctly, but they are not enough to provide reasonable assurance that the iVotronic DRE voting systems did not contribute to the undervote. For example, prior reviews provide reasonable assurance that the Unity election management system did not contribute to the undervote, and the votes captured by iVotronic DREs at the precincts match the voter count from precinct records within acceptable margins of error.

Portions of the Florida state audit, such as the firmware comparison and parallel tests, provided useful information, but the results could not be applied to all the iVotronic DREs used in the election because the number of machines tested was too small. Additionally, the machines were not tested for all different ways a voter can select a candidate in the congressional race. We also did not find any prior testing that would help us understand the effects of a miscalibrated touch screen. To address these issues, we propose that (1) a firmware verification test, (2) a ballot test, and (3) a calibration test be conducted to try to obtain further assurance that the iVotronic DREs used in Sarasota County during the 2006 general election did not cause the undervote. The firmware verification test would compare the firmware in a representative sample of iVotronic DREs with the certified version of firmware. The ballot test would exercise 112 ways to select a candidate on 10 iVotronic DREs. The calibration test would deliberately miscalibrate an iVotronic DRE that uses the certified software and verify the functioning of the machine. We expect the testing would take 2 weeks using a staff of about 6 to 8 people, once the necessary arrangements have been made. Although the proposed tests would provide increased assurance, they would not conclusively eliminate the machines as a cause of the undervote.

Before commencing the testing, we would need to obtain access to the iVotronic DREs that have been subject to a sequestration order in the state court system of Florida, arrange for a test site, obtain some commercially

available software and hardware for the firmware comparison test, develop test protocols and detailed test procedures, and arrange for video recording of the test. Sarasota County election officials have indicated that working around the county's election schedules, they could help us access the machines and provide a test site between November 26 and December 7, 2007.

Our proposed tests could help reduce the possibility that the undervote was caused by the iVotronic DREs. However, even after completing the tests, we would not have absolute assurance that the iVotronic DREs did not play any role in the large undervote. Absolute assurance is impossible to achieve because we are unable to recreate the conditions of the election in which the undervote occurred. By successfully conducting the proposed tests, we could reduce the possibility that the iVotronic DREs were the cause of the undervote and shift attention to the possibilities that the undervote was the result of intentional actions by the voter or voters that did not properly cast their votes on the voting system.

Draft copies of this statement were provided to the Secretary of State of Florida, the Supervisor of Elections of Sarasota County, and ES&S for their review and comment. The Florida Department of State provided technical comments, which we incorporated. The Sarasota County Supervisor of Elections did not provide us comments.

In its comments, ES&S stated that it believes that the collective results of prior testing have demonstrated that the voting systems worked properly in Florida's 13th Congressional District race, and that the focus should be on testing the effect of the ballot display on the undervote. We disagree that the prior test results adequately demonstrate that the voting systems could not have contributed to the undervote. Our analysis identified three areas where further testing could provide increased assurance that the undervote was not caused by the voting systems. We agree with ES&S that the large undervote in Florida's 13th Congressional District race could have been caused by voters who intentionally undervoted or voters who did not properly cast their ballots, potentially because of issues related to the human interaction with the ballot. However, our review focused on whether the voting systems could have contributed to the large undervote. ES&S also provided technical comments, which we incorporated as appropriate.

Background

The 13th Congressional District of Florida comprises DeSoto, Hardee, Sarasota, and parts of Charlotte and Manatee Counties. In the November 2006 general election, there were two candidates in the race to represent the 13th Congressional District: Vern Buchanan, the Republican candidate, and Christine Jennings, the Democratic candidate. The State of Florida certified Vern Buchanan the winner of the election. The margin of victory was 369 votes out of a total of 238,249 votes counted. Table 1 summarizes the results of the election and shows that the results from Sarasota County exhibited a significantly higher undervote rate than in the other counties in the congressional district.

Table 1: Results from 2006 General Election for Florida Congressional District 13

County	Buchanan	Jennings	Undervotes	Total ballots cast	Percentage undervote
Charlotte	4,460	4,277	225	8,962	2.51
DeSoto	3,471	3,058	142	6,672	2.13
Hardee	2,629	1,686	269	4,584	5.87
Manatee	50,117	44,432	2,274	96,828	2.35
Sarasota	58,632	65,487	18,412	142,532	12.92
Total	119,309	118,940	21,322	259,578	

Source: GAO analysis of Florida Division of Elections, Charlotte County, DeSoto County, Hardee County, Manatee County, and Sarasota County data.

Note: Numbers do not add up because of overvotes – where voters select more than the maximum number of candidates allowed in a race; in this case, a ballot that had votes for both Buchanan and Jennings.

In Florida, the Division of Elections in the Secretary of State's office helps the Secretary carry out his or her responsibilities as the chief election officer. The Division of Elections is responsible for establishing rules governing the use of voting systems in Florida. Voting systems cannot be used in any county in Florida until the Florida Division of Elections has issued a certification of the voting system's compliance with the Florida Voting System Standards.² The Florida Voting Systems Certification program is administered by the Bureau of Voting Systems Certification in the Division of Elections.

²Florida Department of State, *Florida Voting System Standards*, Form DS-DE 101 (Jan. 12, 2005).

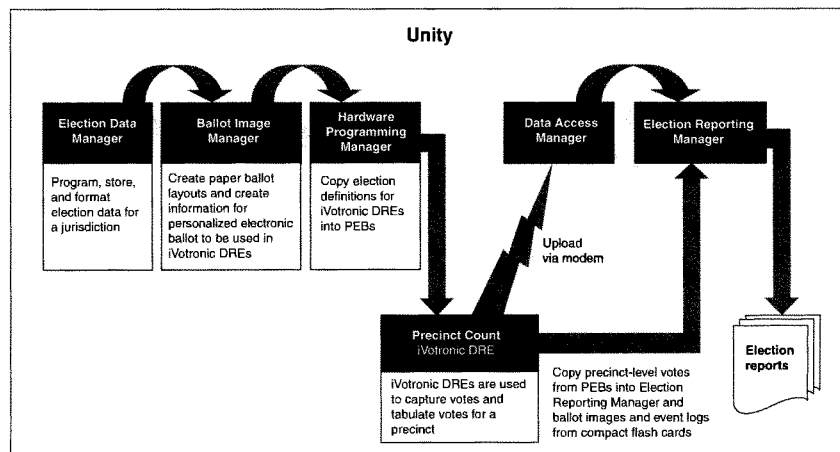
An elected supervisor of elections is responsible for implementing elections in each county in Florida in accordance with Florida election laws and rules. The supervisor of elections is responsible for the purchase and maintenance of the voting systems as well the preparation and use of the voting systems to conduct each election.

Sarasota County Used ES&S Voting Systems in 2006 General Elections

In the 2006 general election, Sarasota County used voting systems manufactured by ES&S. The State of Florida has certified different versions of ES&S voting systems. The version used in Sarasota County was designated ES&S Voting System Release 4.5, Version 2, Revision 2, and consisted of iVotronic DREs, a Model 650 central count optical scan tabulator for absentee ballots, and the Unity election management system. It was certified by the State of Florida on July 17, 2006. The certified system includes different configurations and optional elements, several of which were not used in Sarasota County.

The election management part of the voting system is called Unity; the version that was used was 2.4.4.2. Figure 1 shows the overall election operation using the Unity election management system and the iVotronic DRE.

Figure 1: Overview of Election Operation Using the Unity Election Management System and iVotronic DRE

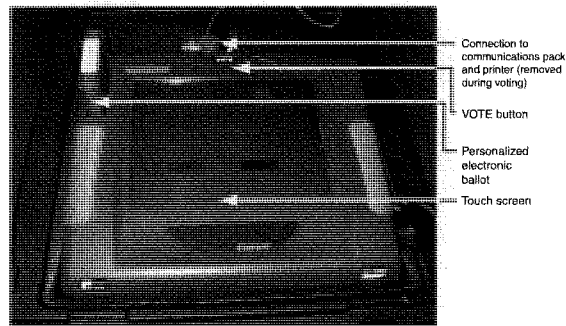


Source: GAO.

Sarasota County used iVotronic DREs for early and election day voting. Specifically, Sarasota County used the 12-inch iVotronic DRE, hardware version 1.1 with firmware version 8.0.1.2.³ Some of the iVotronic DREs are configured with Americans with Disabilities Act (ADA) functionality, which includes the use of audio ballots. The iVotronic DRE uses a touch screen—a pressure-sensitive graphics display panel—to display and record votes (see fig. 2).

³The certified version of ES&S Voting System Release 4.5, Version 2, Revision 2, specifies the use of iVotronic hardware version 1.0. According to Florida Division of Election officials, hardware version 1.1 of the iVotronic DRE has been available since at least 2004 and should have been included as a part of the certification for ES&S Voting System Release 4.5, Version 2, Revision 2. According to ES&S officials, iVotronic firmware version 8.0.1.2 runs in exactly the same manner on hardware versions 1.0 and 1.1.

Figure 2: The iVotronic DRE Voting System and Its Components.



Source: GAO.

The machine has a storage case that also serves as the voting booth. The operation of the iVotronic DRE requires using a personalized electronic ballot (PEB), which is a storage device with an infrared window used for transmission of ballot data to and from the iVotronic DRE. The iVotronic DRE has four independent flash memory modules, one of which contains the program code—firmware—that runs the machine and the remaining three flash memory modules store redundant copies of ballot definitions, machine configuration information, ballots cast by voters, and event logs. The iVotronic DRE includes a VOTE button that the voter has to press to cast a ballot and record the information in the flash memory. The iVotronic DRE also includes a compact flash card that can be used to load sound files onto iVotronic DREs with ADA functionality. The iVotronic DRE's firmware can be updated through the compact flash card. Additionally, at the end of polling, the ballots and audit information are to be copied from the internal flash memory module to the compact flash card.

To use the iVotronic DRE for voting, a poll worker activates the iVotronic DRE by inserting a PEB into the PEB slot after the voter has signed in at the polling place. After the poll worker makes selections so that the appropriate ballot will appear, the PEB is removed and the voter is ready to begin using the system. The ballot is presented to the voter in a series of

display screens, with candidate information on the left side of the screen and selection boxes on the right side (see fig. 3).

Figure 3: Second Ballot Page Showing the Congressional and Gubernatorial Races in Sarasota County's 2006 General Election

U.S. REPRESENTATIVE IN CONGRESS 13TH CONGRESSIONAL DISTRICT (Vote for One)		
Vern Buchanan	REP	<input type="checkbox"/>
Christine Jennings	DEM	<input type="checkbox"/>

STATE GOVERNOR AND LIEUTENANT GOVERNOR (Vote for One)		
Charlie Crist	REP	<input type="checkbox"/>
Jeff Kottkamp		
Jim Davis	DEM	<input type="checkbox"/>
Daryl L. Jones		
Max Linn	REP	<input type="checkbox"/>
Tom Macklin		
Richard Paul Dembinsky	WPA	<input type="checkbox"/>
Dr. Joe Smith		
John Wayne Smith	WPA	<input type="checkbox"/>
James J. Kearney		
Karl C.C. Helm	WPA	<input type="checkbox"/>
Carol Castagnero		
Write-In		<input type="checkbox"/>

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Source: Sarasota County Supervisor of Elections.

The voter can make a selection by touching anywhere on the line, and the iVotronic DRE responds by highlighting the entire line and displaying an X in the box next to the candidate's name. The voter can also change his or her selection by touching the line corresponding to another candidate or by deselecting his or her choice. "Previous Page" and "Next Page" buttons are used to navigate the multipage ballot. After completing all selections, the voter is presented with a summary screen with all of his or her selections (see fig. 4). From the summary screen, the voter can change any selection by selecting the race. The race will be displayed to the voter on its own ballot page. When the voter is satisfied with the selections and has reached the final summary screen, the red VOTE button is illuminated, indicating the voter can now cast his or her ballot. When the VOTE button is pressed, the voting session is complete and the ballot is recorded on the iVotronic DRE. In Sarasota County's 2006 general election, there were nine different ballot styles with between 28 and 40 races, which required

between 15 and 21 electronic ballot pages to display, and 3 to 4 summary pages for review purposes.

Figure 4: First Summary Page in Sarasota County's 2006 General Election

Instructions	
Return to any contest by touching the contest title. To cast your ballot now, press the QOTE button.	
UNITED STATES SENATOR..... No Selection Made	STATE REPRESENTATIVE..... No Selection Made
U.S. REPRESENTATIVE IN CONGR..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
GOVERNOR AND LIEUTENANT GOV..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
ATTORNEY GENERAL..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
CHIEF FINANCIAL OFFICER..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
COMMISSIONER OF AGRICULTURE..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
Previous Page	Summary Ballot Page 1 of 3

Source: Sarasota County Supervisor of Elections.

Analysis of Election Data Shows that Undervote Was Distributed across All Machines and Precincts

Our analysis of the 2006 general election data from Sarasota County does not identify any particular voting machines or machine characteristics that could have caused the large undervote in Florida's 13th Congressional District race. The undervotes in Sarasota County for the congressional race were generally distributed across all machines and precincts. Using voting system data that we obtained from Sarasota County, we found that 1,499 iVotronic DREs recorded votes in the 2006 general election; 84 iVotronic DREs recorded votes during early voting, and 1,415 iVotronic DREs recorded votes on election day.⁴ Using these data, we verified that the vote counts for the contestant, contestee, and undervotes match the reported vote totals for Sarasota County in Florida's 13th Congressional District race. As can be seen in table 2, the undervote rate in early voting was significantly higher than in election day voting.⁵

Table 2: Undervotes in Florida's 13th Congressional District Race during Early and Election Day Voting

	All voters	Early voters	Election day voters
Machines	1,499	84	1,415
Ballots cast	119,919	30,877	89,042
Undervotes	17,846	5,445	12,401
Undervote rate	14.88%	17.63%	13.93%

Source: GAO analysis of Sarasota County data.

The range of the undervote rate for all machines was between 0 and 49 percent, with an average undervote rate of 14.3 percent. When just the early voting machines are considered, the undervote rate ranged between 5 and 28 percent. The largest number of undervotes cast on any one machine on election day was 39. While the range of ballots cast on any one machine on election day was between 1 and 121, the median number of

⁴Election day voting is the casting of ballots on election day at polling places. Absentee and early voting are programs that permit eligible persons to vote prior to election day. Absentee voting is conducted by mail in advance of election day and early voting is generally in-person voting in advance of election day at specific polling locations.

⁵Early and election day ballots include provisional ballots cast during those respective stages of voting and included in the vote totals. 160 provisional ballots were included in the vote totals. 37 provisional ballots were excluded.

Because the absentee ballots were not cast using iVotronic voting systems, we did not verify the absentee ballot counts. When absentee ballots are included, a total of 142,532 ballots were cast and a total of 18,412 undervotes were recorded.

ballots cast on any one machine was 66. The range of undervote rate by precinct was between 0 and 41 percent, and the average undervote by precinct was about 14.8 percent.

Prior Tests and Reviews Provide Some Assurance, but Do Not Provide Reasonable Assurance That the iVotronic DREs Did Not Contribute to the Undervote

Prior to the elections, Sarasota County's voting systems were subjected to several different tests that included testing by the manufacturer, certification testing by the Florida Division of Elections, testing by independent testing authorities, and logic and accuracy testing by Sarasota County's Supervisor of Elections. After the 2006 general election, an audit of Sarasota County's election was conducted by the State of Florida that included a review of the iVotronic source code, parallel tests, and an examination of Sarasota County's election procedures. Although these tests and reviews provide some assurance, as do certain controls that were in place during the election, that the voting systems in Sarasota County functioned correctly, they do not provide reasonable assurance that the iVotronic DREs did not contribute to the undervote.

Prior Tests and Reviews of Sarasota County's Voting Systems Provide Useful Information, but Have Some Shortcomings

According to ES&S officials, ES&S tested the version of the iVotronic DRE that was used in Sarasota County in 2001-2002, but they could not provide us documentation for those tests because the documentation had not been retained.

The Florida Division of Elections conducted certification testing of the iVotronic DRE and the Unity election management system before Sarasota County acquired the system from the manufacturer. The certification process included tests of the election management system and the conduct of mock primary and general elections on the entire voting system. ES&S Voting System, Release 4.5, Version 2, Revision 2, was certified by the Florida Division of Elections on July 17, 2006. According to Florida Division of Elections officials, testing of each version focuses on the new components, and components that were included in prior versions are not as vigorously tested. The 8.0.1.2 version of the iVotronic firmware was first tested as a part of ES&S Release 4.5, Version 1, which was certified in 2005. Version 2 introduced version 2.4.4.2 of the Unity Election Management System, which was certified in August 2005. Certification testing was conducted on software that was received from an independent test authority, who witnessed the building of the firmware from the source code. An independent test authority also conducted environmental testing

of the iVotronic DRE in 2001 that was relied upon by the Florida Division of Elections for certification.

A logic and accuracy test was conducted by Sarasota County on October 20, 2006, on 32 iVotronic DREs, and it successfully verified that all ballot positions on all nine ballot styles could be properly recorded. In addition, the use of a provisional ballot and audio ballot were tested, as well as machines configured for early voting with all nine ballot styles.

After the 2006 general election, the Florida Division of Elections conducted an audit of Sarasota County's 2006 general election that included two parallel tests, an examination of the certified voting system and conduct of election by Sarasota County's elections office, and an independent review of the iVotronic DRE firmware's source code. After the conduct of this audit, the audit team concluded that there was no evidence that suggested the official election results were in error or that the voting systems contributed to the undervote in Sarasota County.⁶ The parallel tests were performed using 10 iVotronic DREs—5 used in the 2006 general election and 5 that were not used. Four of the machines in each test replicated the votes cast on four election day iVotronic DREs. The fifth machine in each test used an ad hoc test script that involved picking a random vote pattern along with a specific vote selection pattern picked from 10 predetermined vote patterns for the 13th Congressional District for each ballot cast. The audit report asserts that testing a total of 10 machines is more than adequate to identify any machine problems or irregularities that could have contributed to undervotes in the Florida-13 race. However, we concluded that the results from the testing of 10 machines cannot be applied to all 1,499 iVotronic DREs used during the 2006 general election because the sample was not random and the sample size was too small.

In examining whether voting systems that were used in Sarasota County matched the systems that were certified by the Florida Division of Elections, the Florida audit team examined the Unity election management system and the firmware installed on six iVotronic DREs. The audit team confirmed that the software running on the Unity election management

⁶Florida Department of State, *Audit Report of the Election Systems and Software, Inc.'s, iVotronic Voting System in the 2006 General Election for Sarasota County, Florida* (Tallahassee, Florida: Feb. 2007), and Security and Assurance in Information Technology Laboratory, Florida State University, *Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware* (Tallahassee, Florida: Feb. 23, 2007).

system and the firmware in the six iVotronic DREs matched the certified versions held in escrow by the Florida Division of Elections. On the basis of its review, the audit team concluded that there is no evidence to indicate that the iVotronic DREs had been compromised or changed. We agree that the test verifies that those six machines were not changed, but any extrapolation beyond this cannot be statistically justified because the size of the sample is too small. Therefore, these tests cannot be used to obtain reasonable assurance that the 1,499 machines used in the general election used the certified firmware.

A software review and security analysis of the iVotronic firmware version 8.0.1.2 was conducted by a team led by Florida State University's SAIT Laboratory. The eight experts in the software review team attempted to confirm or refute many different hypotheses that, if true, might explain the undervote in the race for the 13th Congressional District. In doing so, they made several observations about the code, which we were able to independently verify. The software review and our verification of the observations were helpful, but a key shortcoming was the lack of assurance whether the source code reviewed by the SAIT team or by us, if compiled, would correspond to the iVotronic firmware that was used in Sarasota County for the 2006 election. According to ES&S and Florida Division of Elections officials, in May 2005 an independent testing authority witnessed the process of compiling the source code and building the version of firmware that was eventually certified by the Florida Division of Elections. According to ES&S officials, if necessary, ES&S can recreate the firmware from the source code, but the firmware would not be exactly identical to the firmware certified by the Florida Division of Elections because the embedded date and time stamp in the firmware would be different.

The software review team also looked for security vulnerabilities in software that could have been exploited to cause the undervote. Although the team found several software vulnerabilities, the team concluded that none of them were exploited in Sarasota in a way that would have contributed to the undervote. We did not independently verify the team's conclusion.

**Reasonable Assurance of
Some Voting System
Objectives Has Been
Achieved**

The Unity election management system and the iVotronic DREs are the major voting system components that may require testing to determine whether they contributed to the large undervote in Sarasota County. Our review of tests already conducted and documentation from the election provide us reasonable assurance that the key functions of the Unity

election management system—election definition and vote tabulation—did not contribute to the undervote. The election definitions created using the Unity election management system are tested during logic and accuracy testing to demonstrate that they include all races, candidates, and issues and that each of the items can be selected by a voter. The votes tabulated on the iVotronic DRE at each precinct matched the data uploaded to the Unity election management system, and the totals from the precinct results tapes agree with that obtained by Unity. Further, the state audit confirmed that the Unity election management system software running in Sarasota County matched the escrowed version certified by the Florida Division of Elections.

We have reasonable assurance that the number of ballots recorded by the iVotronic DREs is correct because this number is very close to the number of people recorded on the precinct registers as showing up at the polling places to vote either during early voting or on election day. This assurance also allows us to conclude that issues, such as votes cast by “fleeing voters”—votes that are cast by poll workers for voters who leave the polling place before pressing the button to cast the vote—and the potential loss of votes during a system shutdown, did not affect the undervote in this election. If these issues had occurred, they would have caused a discrepancy between the number of voters who sign in at the polling place to vote and the public counts recorded on the iVotronic DREs.

We have reasonable assurance that provisional ballots were appropriately handled by the iVotronic DREs and the Unity election management system. We also verified that during the Florida certification test process, the Division of Elections relied on successful environmental and shock testing conducted by an independent test authority.

**Reasonable Assurance
That All iVotronic DREs
Used in the 2006 General
Election Used Software
Certified by the Florida
Division of Elections Is
Lacking**

We found that prior testing and activities do not provide reasonable assurance that all iVotronic DREs used in Sarasota County on election day were using the hardware and firmware certified for use by the Florida Division of Elections. Sarasota County has records indicating that only certified versions were procured from ES&S, and the firmware version is checked in an election on the zero and results tapes. However, because there was no independent validation of the system versions, we cannot conclude that no modifications were made to the systems that would have likely made them inconsistent with the certified version. As we previously mentioned, the firmware comparison of only 6 iVotronic DREs in the state audit is insufficient to support generalization to all 1,499 iVotronic DREs that recorded votes during the election. Without reasonable assurance that

all iVotronic DREs are running the same certified firmware, it is difficult for us to rely on the results of other testing that has been conducted, such as the parallel tests or the logic and accuracy tests.

The Ability of Voters to Make Selections in Different Ways and Have Their Votes Properly Recorded Has Not Been Fully Tested

Prior testing of the iVotronic DREs only verified 13 of the 112 ways that we identified that a voter may use to select a candidate in Florida's 13th Congressional District race. Specifically, on an iVotronic DRE, a voter could (1) initially select either candidate or neither candidate (i.e. undervote), (2) change the vote on the initial screen, and (3) use a combination of page back and review screen options to change or verify his or her selection before casting the ballot. By taking into account these variations, our analysis has found at least 112 different ways a voter could make his or her selection in Florida's 13th Congressional District race, assuming that it was the only race on the ballot. Out of 112 different ways to select a candidate in the congressional race, Florida certification tests and the Sarasota County logic and accuracy tests verified 3 ways to select a candidate; and the Florida parallel tests verified 10 ways to select a candidate—meaning that of the 112 ways, 13 have been tested. By not verifying these different ways to select a candidate, we do not have reasonable assurance that the system will properly handle expected forms of voter behavior.

The Effect of Miscalibrated iVotronic DREs Is Unclear

During the setup of the iVotronic DRE, sometimes referred to as the clear and test process, the touch screens are calibrated by using a stylus to touch the screen at 20 different locations. The calibration process is designed to align the display screen with the touch screen input. It has been reported that a miscalibrated machine could affect the selection process by highlighting a candidate that is not aligned with what the voter selected. We identified two reported cases on election day where the miscalibration of the iVotronic DRE led to its closure and discontinued use for the rest of the day. While a miscalibrated machine could certainly make an iVotronic DRE harder to use, it is not clear it would have helped to contribute to the undervote. We did not identify any prior testing or activities that would help us understand the effect of a miscalibrated iVotronic DRE on the undervote.

Further Tests Could Provide Increased but Not Absolute Assurance That the iVotronic DREs Used in the Election Did Not Cause the Undervote

On the basis of our analysis of all prior test and audit activities, we propose that a firmware verification test, a ballot test, and a calibration test be conducted to try to obtain increased assurance that the iVotronic DREs used in Sarasota County during the 2006 general election did not cause the undervote.

We propose that the firmware verification testing be started first, once the necessary arrangements have been made, such as access to the needed machines and the development of test protocols and detailed test procedures. Once we have reasonable assurance that the iVotronic DREs are running the same certified firmware, we could conduct the ballot test and calibration test on a small number of machines to determine whether it is likely the machines accurately recorded and counted the ballots. If the firmware verification tests are successfully conducted, we would have much more confidence that the iVotronic DREs will behave similarly when tested. If there are differences in the firmware running on the iVotronic DREs, we would need to reassess the number of machines that need to be tested for ballot testing and calibration testing in order for us to have confidence that the test results would be true for all 1,499 iVotronic DREs used during the election. In other words, if we are reasonably confident that the same software is used in all 1,499 machines, then we are more confident that the results of the other tests on a small number of machines can be used to obtain increased assurance that the iVotronic DREs did not cause the undervote. Although the proposed tests would provide increased assurance, they would not conclusively eliminate the machines as a cause of the undervote.

Conduct Firmware Testing to Verify That the Firmware in the iVotronic DREs Used in Sarasota County Matches the Certified Version

We propose to conduct a firmware verification test using a statistical sampling approach that can provide reasonable assurance that all 1,499 iVotronic DREs are running the certified version of firmware. The exact number of machines that would be tested depends on the confidence level desired and how much error can be tolerated. We propose drawing a representative sample from all the iVotronic DREs that recorded votes in the general election. With a sample size of 115 iVotronic DREs, which would be divided between sequestered and nonsequestered machines, and assuming that there are no test failures, we would be able to conclude with a 99 percent confidence level that no more than 4 percent of the 1,499 iVotronic DREs used in the election were using uncertified firmware.

We suggest a test approach similar to what was used by the Florida Division of Elections when it verified the firmware for 6 iVotronic DREs.

We estimate that the firmware testing for 115 machines could be conducted in about 5 to 7 days and would require about 5 or 6 people, once the necessary arrangements have been made. The machines would be transported to a test facility specified by Sarasota County election officials where we could perform the test. The activities involved in conducting a firmware validation test would include locating and retrieving the selected iVotronic DRE from the storage facility, transporting it to the test facility, opening the DRE, extracting the chip with the firmware, reading the contents of the chip using a specialized chip reader, and conducting a comparison between the contents and the certified firmware to determine if any differences exist. To conduct this test, we would need commercially available specialized hardware and software similar to that used by the Florida Division of Elections in its firmware comparison test.

**Conduct Ballot Testing of
iVotronic DREs to Confirm
Correct Operation**

We propose conducting ballot testing on 10 iVotronic DREs, each configured with one of the nine different ballot styles, with the 10th machine configured as an early voting machine with all nine ballot styles. We would test 112 ways to select a candidate on the early voting machine. On the election day machines, we would test the 112 different ways distributed across the 9 machines in a random manner, meaning each machine would on average record 12-13 ballots. Assuming that (1) reasonable assurance is obtained that all iVotronic DREs used during the election were using the same certified firmware, and (2) we found no failures during the ballot testing, this testing would provide increased assurance that the iVotronic DREs used during the election, both in early voting and in election day voting, were able to accurately record and count ballots when using any of the 112 ways to select a candidate in the Florida-13 race.

We would plan to code each ballot by including an identifier in the write-in candidate field for either the U.S. senator or governor's race. Using this write-in coding, we could examine the ballot image and confirm that each ballot was accurately recorded and counted by the iVotronic DRE. Any encountered failures would also be more rapidly attributed to a specific test case, and we would be able to more readily repeat the test case to determine if we have a repeatable condition. Testing 112 ways to select a candidate on a single machine would also provide us some additional assurance that the volume of ballots cast on election day did not cause a problem. We note that casting 112 ballots on a single machine is more than that cast on over 99 percent of the 1,415 machines used on election day.

We estimate the ballot testing would take about 2 to 3 days and require the equivalent of 2 people, once the necessary arrangements have been made.

Deliberately Miscalibrate an iVotronic DRE to Understand the Effect on the Undervote

Because little is known about the effect of a miscalibrated machine on the behavior of an iVotronic DRE, we propose to deliberately miscalibrate an iVotronic DREs and verify the functioning of the machine. We propose to identify different ways to miscalibrate a ballot and to test ballots on the miscalibrated iVotronic DRE to verify that it still properly records votes. With this test we would confirm whether (1) the review screen displays the same selection in the Florida-13 race as was highlighted in the selection screen, and (2) that the vote is recorded as it was displayed on the review screen. Again, we would plan to use the write-in candidate option to verify the proper recording of the ballot. This test would demonstrate whether the system correctly records a vote for the race and hence whether it contributed to the undervote. We estimate that the calibration test could be completed in about 1 day by 2 people, once the necessary arrangements have been made.

Several Matters Remain to Be Addressed to Conduct Further Testing

Should the task force ask us to conduct the proposed testing, we want to make the task force aware of several other matters that would need to be addressed before we could begin testing. These activities would require some time and resources to complete before testing could commence.

First, we would need to gain access to iVotronic DREs that have been subject to a sequestration order in the state court system of Florida. If we do not have access to the needed machines, we would be unable to obtain reasonable assurance that the machines used on election day were using certified software, and without this assurance, the results from prior tests and any results of our ballot and calibration tests would be less meaningful because we would be unable to apply the results to all 1,499 iVotronic DREs used during the election. Second, we would need to agree upon an appropriate facility for the tests. Sarasota County Supervisor of Elections has indicated that we can use its warehouse space, but because of upcoming elections in November and January, the only time the election officials would be able to provide us this space and the necessary support is between November 26 and December 7, 2007. If testing cannot be completed during this time period, Sarasota County officials stated that they would not be able to assist us until February 2008. Third, some tests may require commercially available specialized software, hardware, or other tools to conduct the tests. We would need to make arrangements to either borrow or to purchase such testing tools before

commencing testing. Fourth, in order to conduct any tests, we would need to develop test protocols and detailed test procedures and steps. We also anticipate that we would need to conduct a dry run, or dress rehearsal, of our test procedures to ensure that our test tools function properly and that our time estimates are reasonable. Finally, we would need to make arrangements for video recording of our testing. It would be our preference to have a visual record of the tests to document the actual test conduct and to facilitate certain types of test analysis.

Other Observations on Touch Screen Voting Systems

We recognize that human interaction with the ballot layout could be a potential cause of the undervote. Although we have not explored this issue in our review, we note that there is an ongoing academic study that is exploring this issue using voting machines obtained from ES&S. We believe that such experiments could be useful and could provide insight into the ballot layout issue.

During our review, we noted that several suggestions have been offered as possible ways to establish that voters are intentionally undervoting and to provide some assurance that the voting systems did not cause the undervote. First, a voter-verified paper trail could provide an independent confirmation that the touch screen voting systems did not malfunction in recording and counting the votes from the election. The paper trail would reflect the voter's selections and, if necessary, could be used in the counting or recounting of votes. This issue is recognized in the Florida State University SAIT source code review as well as the 2005 and draft 2007 Voluntary Voting Systems Guidelines prepared for the Election Assistance Commission. We have previously reported on the need to implement such a function properly.⁷ Second, explicit feedback to voters that a race has been undervoted and a prompt for voters to affirm their intent to undervote might help prevent many voters from unintentionally undervoting a race. On the iVotronic DREs, such feedback and prompts are provided only when the voter attempts to cast a completely blank ballot, but not when a voter undervotes in individual races. Third, offering a "none of the above" option in a race would provide voters with the opportunity to indicate that they are intentionally undervoting. The State of Nevada provides this option in certain races in its elections. Decisions

⁷GAO, *Elections: Federal Efforts to Improve Security and Reliability of Electronic Voting Systems Are Under Way, but Key Activities Need to Be Completed*, GAO-05-956 (Washington, D.C.: Sept. 21, 2005).

about these or other suggestions about ballot layout or voting system functions should be informed by human factors studies that assess their effectiveness in accurately recording voters' preferences, making voting systems easier to use, and preventing unintentional undervotes.

Conclusions

The high undervote encountered in Sarasota County in the 2006 election for Florida's 13th Congressional District has raised questions about whether the voting systems accurately recorded and counted the votes cast by eligible voters. Other possible reasons for the undervote could be that voters intentionally undervoted or voters did not properly cast their ballots on the voting systems, potentially because of issues relating to the interaction between voters and the ballot. The focus of our review has been to determine whether the voting systems—the iVotronic DREs, in particular—contributed to the undervote. We found that the prior reviews of Sarasota County's 2006 general election have provided valuable information about the voting systems. Our review found that in some cases we were able to rely on this information to eliminate areas of concern. This allowed us to identify the areas where increased assurances were needed to answer the questions being raised. Accordingly, the primary focus of the tests we are proposing is to obtain increased assurance that the results of the prior reviews and our proposed testing can be applied to all the iVotronic DREs used in the election. Our proposed tests involving the firmware comparison, ballot testing, and calibration testing could help reduce the possibility that the undervote was caused by the iVotronic DREs. However, even after completing the tests, we would not have absolute assurance that the iVotronic DREs did not play any role in the large undervote. Absolute assurance is impossible to achieve because we are unable to recreate the conditions of the election in which the undervote occurred. By successfully conducting the proposed tests, we could reduce the possibility that the iVotronic DREs were the cause of the undervote and shift attention to the possibilities that the undervote was the result of intentional actions by the voter or voters that did not properly cast their votes on the voting system.

Comments and Our Evaluation

We provided draft copies of this statement to the Secretary of State of Florida, the Supervisor of Elections of Sarasota County, and ES&S for review and comment. The Florida Department of State provided technical comments, which we incorporated. The Sarasota County Supervisor of Elections appreciated the opportunity to review the draft, but provided us no comments.

In its comments, ES&S stated that it believes that the collective results of testing already conducted on the Sarasota County voting systems have demonstrated that they performed properly and as they were designed to function and that all votes were accurately captured and counted as cast in Florida's 13th Congressional District race. Further, ES&S asserts that tests and analyses should be conducted to examine the effect of the ballot display on the undervote, which it believes is the most probable cause of the undervote.

We disagree that the collective results of testing already conducted on the Sarasota County voting systems adequately demonstrate that the voting systems could not have contributed to the undervote in the Florida-13 race. First, as we have cited, we do not have adequate assurance that all the iVotronic DREs used in Sarasota County used the firmware certified by the Florida Division of Elections. Without this assurance, it is difficult for us to apply the results from the other tests to all 1,499 machines that recorded votes during the election because we are uncertain that all machines would have behaved in a similar manner. Further, we believe that expected forms of voter behavior to select a candidate in the Florida-13 race were not thoroughly tested. While ES&S asserts that such processes would have no effect on the iVotronic DRE's ability to capture and record a voter's selection, we did not identify testing that verified this. Further, while ES&S states that the testing of a deliberately miscalibrated iVotronic DRE would result in a clearly visible indication of which candidate was selected, we could not identify any testing that demonstrated this.

We acknowledge that the large undervote in Florida's 13th Congressional District race could have been caused by voters who intentionally undervoted or voters who did not properly cast their ballots, potentially because of issues related to the human interaction with the ballot. However, the focus of our review, as agreed with the task force, was to review whether the voting systems could have contributed to the large undervote. ES&S also provided technical comments, which we incorporated as appropriate.

Mr. Chairman, this completes my prepared statement. I would be happy to respond to any questions you or other members of the task force may have at this time.

Contacts and Acknowledgments

For further information about this statement, please contact Keith Rhodes, Chief Technologist, at (202) 512-6412 or rhodesk@gao.gov, or Naba Barkakati at (202) 512-4499 or barkakatin@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Other key contributors to this statement include James Ashley, James Fields, Jason Fong, Cynthia Grant, Geoffrey Hamilton, Richard Hung, John C. Martin, Jan Montgomery, Jennifer Popovic, Sidney Schwartz, and Daniel Wexler.

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**Official Task Force Meeting
October 2, 2007**

Motion #6 – Approve GAO Testing Plan and Associated Protocols

I move that the task force approve the proposed GAO testing plan and associated protocols as follows:

- a. Firmware testing to verify that the firmware in the iVotronic DREs used in Sarasota County matches the certified version;
- b. Ballot testing of iVotronic DREs to confirm correct operation;
- c. Miscalibration of an iVotronic DRE to understand the effect on the undervote.

I move further that the Chairman request that all individuals, offices, and entities whose cooperation is necessary, fully, promptly and voluntarily assist the GAO to enable it to conduct the testing described above (offered by Rep. Zoe Lofgren).

Member	Vote
Rep. Gonzalez	Y
Rep. Lofgren	Y
Rep. McCarthy	Y

The Bradenton Herald (Florida)

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October 3, 2007 Wednesday

House task force plans further investigation of Sarasota machines

BYLINE: Stacey Eidson, The Bradenton Herald, Fla.

SECTION: STATE AND REGIONAL NEWS

LENGTH: 728 words

Oct. 3--SARASOTA -- The testing of the touch-screen voting machines in Sarasota County will continue.

Minutes after the bipartisan House task force responsible for investigating the 13th Congressional District race between Republican Vern Buchanan and Democrat Christine Jennings unanimously agreed to continue testing the machines, word quickly spread throughout Sarasota County.

While conducting a poll worker's training course in Venice, Sarasota County Supervisor of Elections Kathy Dent said she welcomed any further investigation of the machines.

"From my perspective, I want it to be as thorough as possible," Dent said. "And if there is something that they uncover, I welcome that."

For months, Dent said, she has worked closely with investigators from the Government Accountability Office who have been examining the performance of Sarasota County's touch-screen voting machines in the November election.

On Tuesday, the GAO told the House task force it needs to conduct further testing before it can issue a decision.

The House investigation could lead to a Democrat being seated if Jennings, who lost by fewer than 400 votes, can prove the machines cost her the election. But Republicans were quick to note that investigators have yet to find a "smoking gun."

In conjunction with the GAO's investigation, the task force has been examining why more than 18,000 ballots cast in Sarasota County recorded no vote for either candidate in November's congressional election.

Sally Tibbetts, Buchanan's communications director, said Buchanan is confident further testing will prove the county's touch-screen voting machines performed correctly.

"I would note that after nearly a year and four independent reviews, there is no evidence that the machines malfunctioned," Tibbetts said. "And we are confident that additional testing is only going to reaffirm that the machines worked and

every vote was counted accurately."

However, Jennings said further testing of the machines is the only way to ensure the accuracy of future elections.

"I think this is wonderful for the voters of Sarasota County and District 13 because this has always been about fair and accurate elections," Jennings said late Tuesday. "To me, this is wonderful that they want to continue the testing to find out what did happen. This shows that they feel there is more to look at."

Jennings, who plans to run again for the District 13 seat in 2008, said she does not mind waiting for an answer to the accuracy of the machines.

"It has never been about time for me," Jennings said. "I think everyone in this country agrees that we want to do everything possible to make sure every vote counts. And I truly believe we are getting closer to finding out what happened and bringing closure to this."

Kindra Muntz, chairwoman of the Sarasota Alliance for Fair Elections, a nonpartisan political action committee that pushed for the replacement of Sarasota County's touch-screen voting machines, applauded the task force's decision.

"We definitely need more investigations on a comprehensive scale, both as to the security procedures used during the election and the physical problems with the machines," Muntz said. "They should take 20 to 30 machines and investigate them thoroughly. Let's get down to the bottom of this because it is in the best interest of the voters."

As the poll workers in Venice were learning about the county's new optical scanners that will be used in the upcoming November election, Dent said she only hopes the change of machines will help restore voter confidence in the system.

"Time will tell," Dent said. "We just had our first poll worker training class out of 41 scheduled. I talked to the workers, they went through their training and they seem pretty comfortable with the machines. That is a good start. We will know better after Nov. 6."

Stacey Eidson, Herald reporter, can be reached at 708-7908.

Herald Washington correspondent Lesley Clark contributed to this report.

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**GAO BRIEFING ON THE TASK FORCE: REPORT
OF THE FINDINGS IN THE INVESTIGATION
INTO THE FL-13 CONGRESSIONAL DISTRICT
ELECTION**

MEETING
BEFORE THE
**COMMITTEE ON HOUSE
ADMINISTRATION**

**TASK FORCE FOR THE CONTESTED ELECTION IN
THE 13TH CONGRESSIONAL DISTRICT OF FLORIDA**

HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

SECOND SESSION

HELD IN WASHINGTON, DC, FEBRUARY 8, 2008

Printed for the use of the Committee on House Administration



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United States Government Accountability Office

GAO

Statement

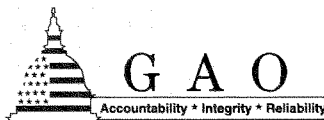
Before the Task Force for the Contested
Election in the 13th Congressional District
of Florida, Committee on House
Administration, House of Representatives

For Release on Delivery
Expected at 10:00 a.m. EST
Friday, February 8, 2008

ELECTIONS

Results of GAO's Testing of Voting Systems Used in Sarasota County in Florida's 13th Congressional District

Statement of Nabajyoti Barkakati, Ph.D.
Acting Chief Technologist
Applied Research and Methods



GAO-08-425T

GAO
Accountability Integrity Reliability
Highlights

Highlights of GAO-08-425T, a statement before the Task Force for the Contested Election in the 13th Congressional District of Florida, Committee on House Administration, House of Representatives

Why GAO Did This Study

In November 2006, about 18,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District (Florida-13). After the election results were contested in the House of Representatives, the task force unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. In October 2007, GAO presented its findings on the review of the voting systems and concluded that while prior tests and reviews provided some assurance that the voting systems performed correctly, they were not enough to provide reasonable assurance that the voting systems in Sarasota County did not contribute to the undervote. GAO proposed that a firmware verification test, a ballot test, and a calibration test be conducted. The task force requested that GAO proceed with the proposed additional tests. GAO also verified whether source code escrowed by Florida could be rebuilt into the firmware used in Sarasota County.

To conduct its work, GAO conducted tests on a sample of voting systems used in Sarasota County during the 2006 general election. GAO witnessed the rebuild of the firmware from the escrowed source code at the manufacturer's development facility. GAO reviewed test documentation from Florida, Sarasota County, and the voting system manufacturer and met with election officials to prepare the test protocols and detailed test procedures.

To view the full product, including the scope and methodology, click on GAO-08-425T. For more information, contact Nabaiyoti Barkakati at (202) 512-6412 or barkakati@gao.gov.

February 8, 2008

ELECTIONS

Results of GAO's Testing of Voting Systems Used in Sarasota County in Florida's 13th Congressional District

What GAO Found

GAO conducted three tests on the iVotronic Direct Recording Electronic (DRE) voting systems in Sarasota County and these tests did not identify any problems. Based on its testing, GAO obtained increased assurance that the iVotronic DREs used in Sarasota County during the 2006 general election did not contribute to the large undervote in the Florida-13 contest. Although the test results cannot be used to provide absolute assurance, GAO believes that these test results, combined with the other reviews that have been conducted by the State of Florida, GAO, and others, have significantly reduced the possibility that the iVotronic DREs were the cause of the undervote.

GAO's firmware verification test showed that the firmware installed in a statistically selected sample of 115 machines used by Sarasota County during the 2006 general election matched the firmware certified by the Florida Division of Elections. The statistical approach used in selecting these machines lets GAO estimate with a 99 percent confidence level that no more than 60 of the 1,499 iVotronic DREs that recorded votes in the 2006 general election were using different firmware. Consequently, GAO is able to place more confidence in the results of other tests conducted on a small number of machines by GAO and by others, which indicated that the iVotronic DREs did not cause the undervote. GAO also confirmed that when the manufacturer rebuilt the iVotronic DRE firmware from the source code that was held in escrow by the Florida Division of Elections and previously reviewed by GAO and others, the resulting firmware matched the version certified by the Florida Division of Elections.

For the ballot test, GAO cast predefined test ballots on 10 iVotronic DREs and confirmed that each ballot was displayed and recorded accurately. GAO conducted the calibration test by miscalibrating two iVotronic DREs and casting ballots on them to validate that the machines recorded the information that was displayed on the touch screen. Based on the results of the ballot and calibration tests, GAO found that (1) the machines properly displayed, recorded, and counted the selections for all test ballots cast during ballot testing involving 112 common ways a voter may have interacted with the system, and (2) the deliberately miscalibrated machines, though difficult to use, accurately recorded the ballot selections as displayed on screen.

At this point, GAO believes that adequate testing has been performed on the voting machine software and does not recommend further testing in this area. Given the complex interaction of people, processes, and technology that must work effectively together to achieve a successful election, GAO acknowledges the possibility that the large undervote in Florida's 13th Congressional District race could have been caused by factors such as voters who intentionally undervoted, or voters who did not properly cast their ballots on the iVotronic DRE, potentially because of issues relating to interaction between voters and the ballot.

Mr. Chairman and Members of the Task Force:

I am pleased to appear before the task force today to present the findings on our testing of the voting equipment used in the 2006 general election in Florida's 13th Congressional District (Florida-13). I would like to thank the task force for its overall support of our efforts and specifically for the assistance provided in obtaining resources from the House Recording Studio that were critical to successfully completing our testing efforts.

In November 2006, about 18,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District.¹ After the election results were contested in the House of Representatives, the task force met and unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. In our October 2, 2007, statement for the task force, we presented the findings of our review of the voting systems and stated that while prior tests and reviews provided some level of assurance that the voting systems in Sarasota County—iVotronic direct recording electronic (DRE) voting systems manufactured by Election Systems and Software (ES&S)—functioned correctly, they were not enough to provide reasonable assurance that the iVotronic DRE voting systems did not contribute to the undervote.² Specifically, we found that assurance was lacking in three areas and proposed to the task force that additional tests—firmware verification, ballot, and calibration—be conducted to address these areas. We stated that successful accomplishment of these tests would provide increased, but not absolute, assurance that the iVotronic DREs used in Sarasota County during the 2006 general election did not cause the undervote. The task force requested that we proceed with the proposed additional tests. Our objectives were to (1) verify that firmware installed in a statistical sample of iVotronic DREs was identical to the firmware certified by the State of Florida, (2) perform ballot testing using 112 ways to cast a ballot for the Florida-13 contest to ensure that the voting machines would properly record and count the ballots, and (3) deliberately miscalibrate voting machines and then cast ballots on those

¹ Undervotes occur when the number of choices selected by the voter is fewer than the maximum allowed for that contest. In this case, it means ballots that did not record a selection for either candidate in the congressional contest.

² GAO, *Elections: Further Testing Could Provide Increased but Not Absolute Assurance That Voting Systems Did Not Cause Undervotes in Florida's 13th Congressional District*, GAO-08-97T (Washington, D.C.: Oct. 2, 2007).

machines to ensure that the voting machines would properly record the ballots. As part of the first objective, we also validated that the source code, which was held in escrow by the Florida Division of Elections, would produce the firmware used by Sarasota County during the 2006 general election.

To conduct our tests, we developed test protocols and detailed test procedures. We met with officials from the Sarasota County Supervisor of Elections, the Florida Department of State and Division of Elections, and ES&S to obtain the necessary details about the voting systems and prior tests to document our test procedures. We also reviewed voting system documentation to develop a testing approach and the test procedures. To ensure that the certified firmware held in escrow by the Florida Division of Elections corresponded to the source code that was reviewed by a team from Florida State University and us, on November 19, 2007, we visited ES&S's development facility in Rockford, Illinois, and witnessed the rebuild of the firmware from the escrowed source code.

Further details on our test methodology are included in the following sections on each of the three tests. Appendix I outlines the process used to select machines for testing, and appendix II lists the iVotronic DREs that we tested. We coordinated with the Florida Division of Elections and the Sarasota County Supervisor of Elections to obtain access to the iVotronic DREs and other necessary test equipment to conduct our testing. We conducted the firmware verification, ballot, and calibration tests at the Sarasota County Voting Equipment Facility (VEF) in Sarasota, Florida. We established the test environment on November 26, 2007, and conducted the tests from November 27, 2007, to December 4, 2007. During this time, we completed the steps necessary to conduct the tests and collected the test data. In addition, we video recorded the tests. One camera was used to capture a wide angle shot of the test room. Other cameras recorded the conduct of the firmware verification, ballot, and calibration tests.

We provided a draft of this statement to the Florida Department of State and ES&S for their review and comments. We briefed the Sarasota County Supervisor of Elections on the contents of our statement. The Florida Department of State and ES&S also conducted a sensitivity review to ensure that business proprietary information is not disclosed in this statement. We conducted our work from October 2007 to February 2008 in Washington, D.C.; Tallahassee and Sarasota, Florida; and at ES&S facilities in Rockford, Illinois, and Omaha, Nebraska.

Results in Brief

We conducted three tests on the iVotronic DRE voting systems used in Sarasota County and these tests did not identify any problems that would indicate that the machines were responsible for the undervote in the Florida-13 race in the 2006 general election. In our firmware verification test, we extracted the firmware from a random probability sample of 115 iVotronic DREs out of the 1,499 iVotronic DREs used in Sarasota County's 2006 general election and found that each machine's firmware matched the certified version of firmware held in escrow by the Florida Division of Elections. The statistical approach used in selecting these machines enables us to estimate with a 99 percent confidence level that at least 1,439 of the 1,499 machines used the same firmware that was certified by the Florida Division of Elections. Consequently, we have more confidence in the results of other tests conducted on a small number of machines by GAO and by others, which indicated that the iVotronic DREs were not the cause of the undervote. We witnessed the rebuild of the iVotronic DRE's firmware from the source code that was held in escrow by the Florida Division of Elections and that was previously reviewed by Florida State University and by us. At ES&S's software development facility, we observed that rebuilding the firmware from the escrowed source code resulted in the same firmware that was certified and held in escrow by the Florida Division of Elections. This validation provides greater confidence in the results of prior source code reviews by Florida State University and us.

For the ballot test, we cast predefined test ballots on 10 iVotronic DREs and confirmed that each ballot was displayed and recorded accurately. The test ballots represented 112 common ways a voter may have interacted with the iVotronic DRE to select a candidate in the Florida-13 race and cast a ballot. These tests were performed on nine machines configured as election day machines and then repeated on one machine configured as an early voting machine.

Finally, we conducted the calibration test by miscalibrating two iVotronic DREs and casting ballots on them to validate that the machines recorded the information that was displayed on the touch screen. Our tests, involving a total of 10 different miscalibration patterns and capturing 39 ballots, found that the machines correctly displayed the selection in the Florida-13 race on the review screen and correctly recorded the ballot. Although the machines were more difficult to use, the selections shown on the screen were the same selections captured by the machine when the ballot was cast.

Based on the results of these tests, we have obtained increased assurance, but not absolute assurance that the iVotronic DREs used in Sarasota County's 2006 general election did not contribute to the large undervote in the Florida-13 contest. Absolute assurance is impossible to achieve because we are unable to recreate the conditions of the election in which the undervote occurred. Although the test results cannot be used to provide absolute assurance, we believe that these test results, combined with the other reviews that have been conducted by the State of Florida, GAO, and others, have significantly reduced the possibility that the iVotronic DREs were the cause of the undervote. At this point, we believe that adequate testing has been performed on the voting machine software to reach this conclusion and do not recommend further testing in this area. Given the complex interaction of people, processes, and technology that must work effectively together to achieve a successful election, we acknowledge the possibility that the large undervote in Florida's 13th Congressional District race could have been caused by factors such as voters who intentionally undervoted, or voters who did not properly cast their ballots on the iVotronic DRE, potentially because of issues relating to interaction between voters and the ballot.

Background

The 13th Congressional District of Florida comprises DeSoto, Hardee, Sarasota, and parts of Charlotte and Manatee Counties. In the November 2006 general election, there were two candidates in the race to represent the 13th Congressional District: Vern Buchanan, the Republican candidate, and Christine Jennings, the Democratic candidate. The State of Florida certified Vern Buchanan the winner of the election. The margin of victory was 369 votes out of a total of 238,249 votes counted. Table 1 summarizes the results of the election and shows that the results from Sarasota County exhibited a significantly higher undervote rate than in the other counties in the congressional district.

Table 1: Results from 2006 General Election for Florida Congressional District 13

County	Buchanan	Jennings	Undervotes	Total ballots cast	Percentage undervote
Charlotte	4,460	4,277	225	8,962	2.51
DeSoto	3,471	3,058	142	6,672	2.13
Hardee	2,629	1,686	289	4,584	5.87
Manatee	50,117	44,432	2,274	96,828	2.35
Sarasota	58,632	65,487	18,412	142,532	12.92
Total	119,309	118,940	21,322	259,578	

Source: GAO analysis of Florida Division of Elections, Charlotte County, DeSoto County, Hardee County, Manatee County, and Sarasota County data.

Note: Numbers do not add up because of overvotes—where voters select more than the maximum number of candidates allowed in a race; in this case, an overvote was a ballot that had votes for both Buchanan and Jennings.

As seen in table 1, about 18,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District. After the election results were contested in the House of Representatives, the task force met and unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. On June 14, 2007, we met with the task force and agreed upon an engagement plan. We reported on the status of our review at an interim meeting held by the task force on August 3, 2007.³

On October 2, 2007, we reported that our analysis of election data did not identify any particular voting machines or machine characteristics that could have caused the large undervote in the Florida-13 race.⁴ The undervotes in Sarasota County were generally distributed across all machines and precincts. We found that some of the prior tests and reviews conducted by the State of Florida and Sarasota County provided assurance that certain components of the voting system in Sarasota County functioned correctly, but they were not enough to provide reasonable assurance that the iVotronic DREs did not contribute to the undervote. We proposed three tests—firmware verification, ballot, and calibration—to provide increased assurance, but not absolute assurance, that the iVotronic DREs did not cause the large undervote in Sarasota County. We

³ GAO, *Elections: Status of GAO's Review of Voting Equipment Used in Florida's 13th Congressional District*, GAO-07-1167T (Washington, D.C.: Aug. 3, 2007).

⁴ GAO-08-97T.

stated that the successful conduct of the tests could reduce the possibility that the voting systems caused the undervote and shift attention to the possibilities that voters intentionally undervoted or voters did not properly cast their ballots on the iVotronic DRE, potentially because of issues relating to interaction between voters and the ballot.

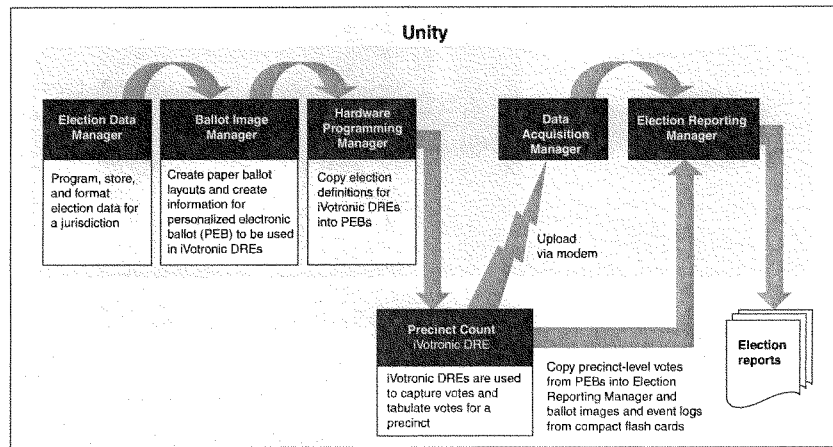
Overview of the Voting Systems Used in Sarasota County in the 2006 General Elections

In the 2006 general election, Sarasota County used voting systems manufactured by ES&S. The State of Florida has certified different versions of ES&S voting systems. The version used in Sarasota County was designated ES&S Voting System Release 4.5, Version 2, Revision 2, and consisted of iVotronic DREs, a Model 650 central count optical scan tabulator for absentee ballots, and the Unity election management system. It was certified by the State of Florida on July 17, 2006. The certified system includes different configurations and optional elements, several of which were not used in Sarasota County.⁵

The election management part of the voting system is called Unity; the version that was used was 2.4.4.2. Figure 1 shows the overall election operation using the Unity election management system and the iVotronic DRE.

⁵ In May 2007, the State of Florida enacted legislation requiring, in general, the use of optical scan voting equipment that provides a paper trail. These requirements are effective July 1, 2008. There is an exemption from these requirements for voting by persons with disabilities.

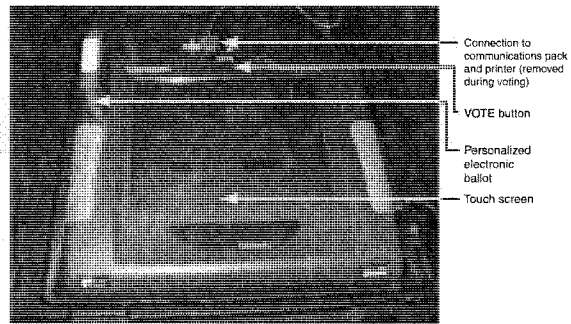
Figure 1: Overview of Election Operation Using the Unity Election Management System and iVotronic DRE



Source: GAO.

Sarasota County used iVotronic DREs for early and election day voting. Specifically, Sarasota County used the 12-inch iVotronic DRE, hardware version 1.1 with firmware version 8.0.1.2.⁶ Some of the iVotronic DREs are configured to use audio ballots, which are often referred to as Americans with Disabilities Act (ADA) machines. The iVotronic DRE uses a touch screen—a pressure-sensitive graphics display panel—to display and record votes (see fig. 2).

⁶ The certified version of ES&S Voting System Release 4.5, Version 2, Revision 2, specifies the use of iVotronic hardware version 1.0. According to Florida Division of Election officials, hardware version 1.1 of the iVotronic DRE has been available since at least 2004 and should have been included as a part of the certification for ES&S Voting System Release 4.5, Version 2, Revision 2. According to ES&S officials, iVotronic firmware version 8.0.1.2 runs in exactly the same manner on hardware versions 1.0 and 1.1.

Figure 2: The iVotronic DRE Voting System and Its Components

Source: GAO.

The machine has a storage case that also serves as the voting booth. The operation of the iVotronic DRE requires the use of a personalized electronic ballot (PEB), which is a storage device with an infrared window used for transmission of ballot data to and from the iVotronic DRE. The iVotronic DRE has four independent flash memory modules, one of which contains the program code—firmware—that runs the machine; the remaining three flash memory modules store redundant copies of ballot definitions, machine configuration information, ballots cast by voters, and event logs (see fig. 3). The iVotronic DRE includes a VOTE button that the voter has to press to cast a ballot and record the information in the flash memory. The iVotronic DRE also includes a compact flash card that can be used to load sound files onto iVotronic DREs with ADA functionality. The iVotronic DRE's firmware can be updated through the compact flash card. Additionally, at the end of polling, the ballots and audit information are to be copied from the internal flash memory module to the compact flash card.

Figure 4: Second Ballot Page Showing the Congressional and Gubernatorial Races in Sarasota County's 2006 General Election

U.S. REPRESENTATIVE IN CONGRESS 13TH CONGRESSIONAL DISTRICT (Vote for One)		
Dern Bechman	REP	<input type="checkbox"/>
Christine Jennings	DEM	<input type="checkbox"/>

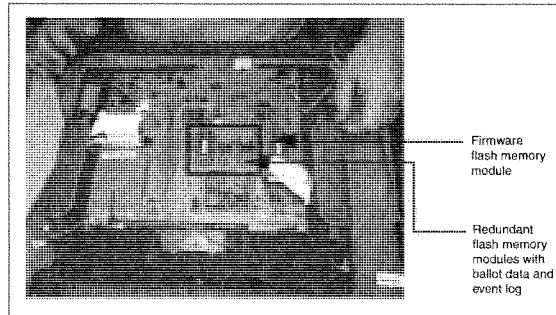
STATE GOVERNOR AND LIEUTENANT GOVERNOR (Vote for One)		
Charlie Crist	REP	<input type="checkbox"/>
Jeff Nuttkamp	DEM	<input type="checkbox"/>
Jim Davis	DEM	<input type="checkbox"/>
Daryl L. Jones	REP	<input type="checkbox"/>
Max Linn	DEM	<input type="checkbox"/>
Tom Macklin	DEM	<input type="checkbox"/>
Richard Paul Dembinsky	DEM	<input type="checkbox"/>
Dr. Joe Smith	DEM	<input type="checkbox"/>
John Wayne Smith	DEM	<input type="checkbox"/>
James J. Kearney	DEM	<input type="checkbox"/>
Karl C.C. Belov	DEM	<input type="checkbox"/>
Carol Castagnaro	DEM	<input type="checkbox"/>
Write-in		<input type="checkbox"/>

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Source: Sarasota County Supervisor of Elections.

The voter can make a selection by touching anywhere on the line, and the iVotronic DRE responds by highlighting the entire line and displaying an X in the box next to the candidate's name. The voter can also change his or her selection by touching the line corresponding to another candidate or by deselecting his or her choice. "Previous Page" and "Next Page" buttons are used to navigate the multipage ballot. After completing all selections, the voter is presented with a summary screen with all of his or her selections (see fig. 5). From the summary screen, the voter can change any selection by selecting the race. The race will be displayed to the voter on its own ballot page. When the voter is satisfied with the selections and has reached the final summary screen, the red VOTE button is illuminated, indicating the voter can now cast his or her ballot. When the VOTE button is pressed, the voting session is complete and the ballot is recorded on the iVotronic DRE. In Sarasota County's 2006 general election, there were nine different ballot styles with between 28 and 40 races, which required between 15 and 21 electronic ballot pages to display, and 3 to 4 summary pages for review purposes.

Figure 3: Inside View of the iVotronic DRE Showing the Flash Memory Modules



Source: GAO.

To use the iVotronic DRE for voting, a poll worker activates the iVotronic DRE by inserting a PEB into the PEB slot after the voter has signed in at the polling place. After the poll worker makes selections so that the appropriate ballot will appear, the PEB is removed and the voter is ready to begin using the system. The ballot is presented to the voter in a series of display screens, with candidate information on the left side of the screen and selection boxes on the right side (see fig. 4).

Figure 5: First Summary Page in Sarasota County's 2006 General Election

Instructions	
Return to any contest by touching the contest title. To cast your ballot now, press the VOTE button.	
UNITED STATES SENATOR..... No Selection Made	STATE REPRESENTATIVE..... No Selection Made
U.S. REPRESENTATIVE IN CONGR..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
GOVERNOR AND LIEUTENANT GOV..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
ATTORNEY GENERAL..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
CHIEF FINANCIAL OFFICER..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
COMMISSIONER OF AGRICULTURE..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made

Previous Page Summary Ballot Page 1 of 3 Next Page

Source: Sarasota County Supervisor of Elections.

Election Systems Involve People, Processes, and Technology

An election system is based upon a complex interaction of people (voters, election officials, and poll workers), processes (controls), and technology that must work effectively together to achieve a successful election. The particular technology used to cast and count votes is a critical part of how elections are conducted, but it is only one facet of a multifaceted election process that involves the interplay of people, processes, and technology.

As we have previously reported, every stage of the election process—registration, absentee and early voting, preparing for and conducting Election Day activities, provisional voting, and vote counting—is affected by the interaction of people, processes, and technology.⁷ Breakdowns in the interaction of people, processes, and technology may, at any stage of

⁷ GAO, *Elections: The Nation's Evolving Election System as Reflected in the November 2004 General Election*, GAO-06-450 (Washington, D.C.: June 6, 2006).

an election, impair an accurate vote count. For example, if the voter registration process is flawed, ineligible voters may be allowed to cast votes. Poll worker training deficiencies may contribute to discrepancies in the number of votes credited and cast, if voter information was not entered properly into poll books. Mistakes in using the DRE systems could result from inadequate understanding of the equipment on the part of those using it.

As noted in our October statement, we recognize that human interaction with the ballot layout could be a potential cause of the undervote, and we noted that several suggestions have been offered as possible ways to establish that voters are intentionally undervoting and to provide some assurance that the voting systems did not cause the undervote.⁸ For instance,

- A voter-verified paper trail could provide an independent confirmation that the touch screen voting systems did not malfunction in recording and counting the votes from the election. The paper trail would reflect the voter's selections and, if necessary, could be used in the counting or recounting of votes. This issue was also recognized in the source code review performed by the Security and Assurance in Information Technology (SAIT) laboratory at Florida State University as well as the 2005 and draft 2007 Voluntary Voting Systems Guidelines prepared for the Election Assistance Commission. We have previously reported on the need to implement such a function properly.⁹
- Explicit feedback to voters that a race has been undervoted and a prompt for voters to affirm their intent to undervote might help prevent many voters from unintentionally not casting a vote in a race. On the iVotronic DREs, such feedback and prompts are provided only when the voter attempts to cast a completely blank ballot, but not when a voter fails to vote in individual races.
- Offering a "none of the above" option in a race would provide voters with the opportunity to indicate that they are intentionally undervoting. For example, the State of Nevada provides this option in certain races in its elections.

⁸ GAO-08-97T.

⁹ GAO, *Elections: Federal Efforts to Improve Security and Reliability of Electronic Voting Systems Are Under Way, but Key Activities Need to Be Completed*, GAO-05-956 (Washington, D.C.: Sept. 21, 2005).

We reported that decisions about these or other suggestions about ballot layout or voting system functions should be informed by human factors studies that assess such measures' effectiveness in accurately recording voters' preferences, making voting systems easier to use, and preventing unintentional undervotes.

Tests Confirm Sarasota County iVotronic DREs Used Same Firmware Certified by Florida

We previously reported that having reasonable assurance that all iVotronic DREs that recorded votes in the 2006 general election were running the same certified firmware would allow us to have more confidence that the iVotronic DREs will behave similarly when tested.¹⁰ Consequently, if we are reasonably confident that the same firmware was running in all 1,499 machines, then we are more confident that the results of other tests, conducted both by GAO and by others, on a small number of machines can be used to obtain increased assurance that the iVotronic DREs did not cause the undervote. We also reported that there was a lack of assurance that the source code that was held in escrow by the Florida Division of Elections and that was previously reviewed by Florida State University and by us, if rebuilt, would corresponded to the firmware that was certified and held in escrow by the Florida Division of Elections. We found that the firmware on a statistically selected sample of 115 iVotronic DREs was the same as that certified by the Florida Division of Elections. We also found that the escrowed source code, when rebuilt into executable firmware, corresponded to the 8.0.1.2 firmware that was certified by the Florida Division of Elections.

Methodology for Firmware Verification Testing

Our methodology to obtain reasonable assurance that the firmware used on Sarasota County's iVotronic DREs during the 2006 general election was the same as that certified by the State of Florida was broken down into two basic steps: (1) selecting a representative sample of machines, and (2) verifying that the firmware extracted from the voting machines was the same as the escrowed firmware that had been certified by the Florida Division of Elections. Appendix I details the methodology for selecting the representative sample of machines. Appendix II contains a list of the serial numbers of the tested iVotronic DREs.

To ensure that we would be testing with the iVotronic firmware certified by the Florida Division of Elections, on October 18, 2007, we and officials

¹⁰ GAO-08-97T.

from the Florida Division of Elections made two copies of the escrowed iVotronic 8.0.1.2 firmware on compact discs (CD) and placed them in two tamper-evident bags with serial numbers. The bags were subsequently hand-delivered by a Florida Division of Elections official for our use in the firmware verification test and for the rebuilding of the firmware from the source code.

In order to extract the firmware from an iVotronic DRE, the machine was placed on an anti-static mat and the case was opened using a special screwdriver. After lifting the case, a special extraction tool was used to remove the flash memory module that contains the firmware. The flash memory module was then inserted in the socket of a Needham Electronics' EMP-300 device that was connected to the universal serial bus (USB) port of a personal computer (PC). The EMPWin application running on that PC was used to read the firmware from the flash memory module and save the extracted firmware on the PC. The Florida Division of Elections loaned us the EMP-300 and EMPWin application for use in extracting firmware from the flash memory module.

To compare the extracted firmware with the escrowed version, we relied on two commercially available software programs. First, we acquired a license for PrestoSoft's ExamDiff Pro software that enables comparison of files. The ExamDiff Pro software is a commercially available program designed to highlight the differences between two files. For each selected iVotronic DRE, the extracted firmware was compared with the escrowed version with any differences highlighted by the program.

Second, to further ensure that the extracted firmware matched the escrowed firmware, we compared the SHA-1 hash value of the extracted firmware to the hash value of the comparable certified firmware.¹⁴ We computed the SHA-1 hash by using the Maresware hash software that was provided by the Florida Division of Elections. In order to ensure that the commercial Maresware hash software properly calculated the SHA-1 hash value, we (1) created four files and obtained a fifth file that contained

¹⁴ The National Institute of Standards and Technology (NIST) has issued a Federal Information Processing Standard (FIPS) that describes four hashing algorithms that are iterative, one-way hash functions that can process a file and produce a condensed representation called a message digest or "hash." These algorithms enable the user to validate a file's integrity since any change to the file will, with a very high probability, result in a different message digest. The technical details of this process are contained in FIPS 180-2. The algorithm selected for this testing effort is commonly referred to as SHA-1 and is the same algorithm used by the Florida Division of Elections during its audit.

executable code, (2) obtained hash values for each file by either using an external program that generated the hash values using the same hashing algorithm as the commercial product or using known hash values,¹² and (3) used the commercial program acquired for testing the firmware to ensure that the hash values it generated for these five files were identical to the expected hash values for those files. In each case, the hash values generated by the commercial program were identical to the expected values. Accordingly, reasonable assurance for the purposes of our review was obtained that the commercial program produced its hash values in accordance with the NIST algorithm.

At the end of each day, we (1) used the commercial Maresware software to compute hash values for each of the firmware programs that had been unloaded during that day and all previous days, and (2) compared each hash created by this program to the expected value that was calculated from the firmware that had been escrowed by the Florida Division of Elections. This comparison provided further assurance that the extracted firmware was (1) identical to the version escrowed by the Florida Division of Elections when the hashes agreed, or (2) different if the hashes did not agree.

We also verified that sequestered machines were not used since the 2006 general election. For each of these sequestered machines, we used an audit PEB to copy the audit logs onto a compact flash card and then used the Unity election reporting manager to generate event log reports. We examined the event logs for the date and time of occurrence of activities that would indicate whether the machine had been used. Lack of such activities since the 2006 general election provided reasonable assurance that the machines had not been used since they were sequestered.¹³

In addition, to verify that the source code for iVotronic DRE firmware version 8.0.1.2 previously examined by the Florida State University SAIT source code review team and by GAO corresponded with the version

¹² Two of the files and the expected values used came from FIPS 180-2.

¹³ We verified that sequestered machines were not used since the 2006 general election by (1) verifying that the seals placed on these machines agreed with Sarasota County's records, and (2) checking the event logs maintained on the machine to determine whether the machines had been used since the machine had been sequestered. In every case, we found that the seal numbers agreed with Sarasota County's records. We were able to check the event log for 57 of the 58 sequestered iVotronic DREs. We were unable to power up the remaining iVotronic DRE and were consequently unable to extract the needed audit data.

certified by the Florida Division of Elections, ES&S officials stated that it still had the development environment that could be used to compile, or rebuild, the certified firmware from the source code retained in escrow by the Florida Division of Elections.¹⁴ As we previously noted, a software review and security analysis of the iVotronic DRE firmware was conducted by a team led by Florida State University's SAIT laboratory.¹⁵ The software review team attempted to confirm or refute many different hypotheses that, if true, might explain the undervote in the race for the 13th Congressional District. In doing so, they made several observations about the source code, which we were able to independently verify.

The rebuilding of the firmware was conducted by ES&S at its Rockford, Illinois, facility on November 19, 2007, and witnessed by us. Prior to the rebuild, the Florida Division of Elections provided an unofficial copy of the source code to ES&S so that ES&S could prepare the development environment and test the rebuild steps. Using the official sealed copy of the source code CD, ES&S rebuilt the firmware in front of GAO representatives. ES&S described the development environment and we inspected it to satisfy ourselves that the firmware was faithfully rebuilt using the escrowed source code. After the rebuilding of the firmware, the certified version of 8.0.1.2 firmware was compared with the rebuilt version using PrestoSoft's ExamDiff Pro.

Results of Firmware Verification Testing

While the Florida audit team had previously confirmed that the firmware running on six iVotronic DREs matched the certified version held in escrow by the Florida Division of Elections, we found that the sample size was too small to support generalization to all 1,499 iVotronic DREs that recorded votes during the 2006 general election. Accordingly, we conducted a firmware verification test on a statistically valid sample of 115 iVotronic DRE machines used by Sarasota County during the 2006 general election. The selected machines fell into two groups—machines that had not been used since the 2006 general election (referred to as sequestered

¹⁴ In our October 2007 statement, we reported that according to ES&S, firmware compiled from the Florida escrowed source code may not be exactly identical to the firmware certified by the Florida Division of Elections because the embedded date and time stamp in the firmware would be different. We found that the date and time was not embedded in the firmware and that an identical version could be created.

¹⁵ Security and Assurance in Information Technology Laboratory, Florida State University, *Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware* (Tallahassee, Florida: Feb. 23, 2007).

machines) and machines that had been used in subsequent elections. For each machine, we extracted the firmware from a flash memory module in that machine and then compared the extracted firmware with the escrowed version using commercially available file comparison tools to determine whether they agreed. We found that the firmware installed in the flash memory module of each machine matched the escrowed firmware that had been certified by Florida. The statistical approach used to select these machines lets us estimate with a 99 percent confidence level that at least 1,439, or 96 percent, of the 1,499 machines used in the 2006 general election used the firmware that was certified by the State of Florida.

We witnessed the rebuild of the iVotronic DRE's firmware from the source code that was held in escrow by the Florida Division of Elections and that was previously reviewed by Florida State University and by us. At ES&S's software development facility, we observed that rebuilding the firmware from the escrowed source code resulted in the same firmware that was certified and held in escrow by the Florida Division of Elections. The comparison of the escrowed firmware to the version that was rebuilt by the vendor identified no differences and provides us reasonable assurance that the escrowed firmware corresponded to the escrowed source code. The successful rebuilding of the firmware from the escrowed source code enables us to have greater confidence in the conclusions derived from prior source code reviews by Florida State University and us.

Ballot Testing Showed That Machines Accurately Recorded and Counted Ballots

In our October 2007 statement, we noted that there were 112 common ways a voter may interact with the system to select a candidate in the Florida-13 race and cast the ballot, and that prior testing of the iVotronic DREs covered only 13 of these 112 possible ways. We developed 224 test ballots to verify that the iVotronic DRE could accurately capture ballots using each of these 112 common ways a voter may interact with the system; 112 test ballots were cast on one machine configured for early voting, and another 112 ballots were cast on nine machines configured for election day voting. Our tests showed that for each of the 224 test ballots, the iVotronic DRE correctly captured each vote as cast for the Florida-13 race. We also conducted firmware verification tests on these machines and verified that they were running the certified firmware.

Methodology for Ballot Testing

The methodology for ballot testing can be broken into two major areas—development of the test ballots and execution of the test using those ballots. The following sections discuss these areas.

Development of Test Ballots

In examining how the system allowed voters to make a selection in the Florida-13 race, we found at least 112 different ways a voter could make his or her selection and cast the ballot in the Florida-13 race, assuming that it was the only race on the ballot. Specifically, a voter could (1) initially select either candidate or neither candidate (i.e., undervote), (2) change the vote on the initial screen, and (3) use a combination of features to change or verify his or her selection by using the page back and review screen options. Accordingly, we tested these 112 ways to select a candidate on the early voting machine and on the election day machines (224 test ballots in total).

The 112 standard test ballots cover all combinations of the following types of voter behavior:

- Voter makes selection on the initial ballot screen and makes no changes or takes any other action to return to the contest to review or change selection.
- Voter makes selection on the initial ballot screen and decides before leaving that screen to change the selection because of an error in selecting the candidate or for some other reason.
- Voter makes selection on the initial ballot screen and then decides to use the page back option to review or change selection.
- Voter makes selection on the initial ballot screen and continues to the review screen and then decides to use the review screen option to review or change selection.
- Voter makes selection on the initial ballot screen and uses a combination of page back and review screen options to review or change selection.

In each instance where a selection could be made, three choices were possible for the Florida-13 race: a selection for one of the two candidates, or no selection (i.e., an undervote).

In developing the standard test ballots, we did not consider all combinations of some other types of voter behavior that would have significantly increased the number of test cases without providing significant benefits. In most cases, such behavior are variants of the primary voter behavior that we examined. The following are examples of

voter behavior that were not included in the standard test set in order to reduce the number of test cases to practicable levels:

- Using a one-touch or two-touch method to make changes on a ballot page.¹⁶
- Varying the number of pages a voter may go back (“page backs”) to return to the page containing the Florida-13 race to change or review a selection.
- Casting a ballot from the review screen selection. The VOTE button is not activated until the voter reaches the last review screen. However, once the VOTE button has been activated, a ballot may be cast from any screen. For example, a voter may activate the VOTE button and then return to a contest to review or change the selection using the review screen option. Once the voter goes to the contest from the review screen and makes any desired changes, the voter can then cast the ballot from that screen rather than going back to the last page of the review screen or even the review screen that was used to return to the selection.

Although we did not consider all combinations of these types of voter behavior when developing the standard test ballots, we included some of these user interactions in the execution of applicable test ballots to provide increased assurance that the system would handle these voter behaviors. For each applicable test ballot, we randomly determined the test procedure that should be used for the following attributes:

- **Initial change method** – The standard test ballots address voters making changes on the initial ballot screen. Where possible, the method used to change (one-touch or two-touch) the selection was randomly selected.

¹⁶ The iVotronic DREs used in Sarasota County allow the user to make changes using two methods. The first method allows the user to simply touch the other candidate; e.g., Candidate A is initially selected and the voter decides to select Candidate B by touching the name of Candidate B. We referred to this as the “one-touch method.” The other method, referred to as the “two-touch method,” involves the user first deselecting the initial choice and then making another selection; e.g., Candidate A is initially selected and the voter decides to select Candidate B by (1) touching the name of Candidate A, which deselects Candidate A, and then (2) touching the name of Candidate B to select it.

-
- **Number of page backs** – The ballots used by Sarasota County included the page back function. After reviewing the ballots, it appeared reasonable to expect that voters who may have used the page back option would probably decide that they had missed the race by the time they went one or two pages beyond the page with the Florida-13 race. Therefore, when a standard test ballot contained a page back requirement, the number of page backs was randomly selected to determine whether one or two page backs should be used.
 - **Page back change method** – Some test ballots required a change after the page back option was selected. As with the initial change method, where possible, the method of changing (one-touch or two-touch) the selection was randomly assigned.
 - **Review screen change method** – The system displays a review screen that shows the voter's selections (or lack of selections) after the voter has progressed through all contests. On the review screen, the voter can select a race to go directly to that contest and (1) review the selection made, and (2) make any desired corrections. The standard test ballots were designed to cover this type of event. Where possible, the method used to make the change (one-touch or two-touch) was randomly selected.
 - **Activate VOTE button and cast ballots from the review screen** – In order to test casting ballots from locations other than the last review screen, the VOTE button must be activated prior to going to a screen where the ballot is cast.¹⁷ In order to determine which test ballots should be used for this test, a two-step approach was adopted. First, a random selection of the ballots that use the review screen option was made to determine which test ballots should have the VOTE button activated. Then a random selection of these test ballots was made to determine whether the ballot should be cast from the review screen selection.

Besides those attributes that directly affect the selection in the Florida-13 race, we varied the other attributes on the ballot in order to complete the

¹⁷ The actual procedure is to (1) go to the last review screen, which activates the VOTE button, (2) page back to the contest (normally 2 or 3 page backs depending on the ballot style), and (3) selecting the contest on the review screen that should be revisited. We assumed that voters would cast such ballots using this procedure instead of using the page back option because it did not appear reasonable that a voter would page back at least 17 screens to reach the Florida-13 race, which was the focus of the testing.

ballot test. For each of the 224 test ballots, we used random values for other attributes, including the following:

- **Ballot style** – Each ballot was randomly assigned one of the nine ballot styles used in the election.
- **Write-in candidate** – All ballot styles includes write-in options in at least 2 races—United States Senate and State Governor/Lieutenant Governor. To verify that the iVotronic DRE accurately recorded the selection in the Florida-13 race for each test ballot, we needed a way to identify each test ballot in the ballot image log. To accomplish this, we randomly selected one of these two races, selected the write-in candidate for the race, and entered a unique value (i.e., the test ballot number) in the write-in field.
- **Candidates and selections in other races on the ballot** – Each ballot style had between 28 and 40 contests on the ballot. The values for the contests besides the Florida-13 race and the write-in field were also randomly selected. For example, most items had three possible choices—candidate 1 (or Yes), candidate 2 (or No), and undervote. Which of these three values was used for a given contest was randomly determined.

The values used for these attributes were independently determined for the election day and early voting test ballots. For example, Test Ballot 2 (election day) and Test Ballot 202 (early voting) were designed to test the same standard condition described by one of the 112 standard test ballots.¹⁸ Table 2 illustrates some of the similarities and differences between the two test ballots that result from the random selection process used to determine the other aspects of the ballot.

¹⁸ The standard actions taken in these two test ballots called for the tester to (1) make a selection on the initial screen and then change the selection, (2) page back to the initial selection screen and change the selection, and (3) use the review screen option to change the selection again.

Table 2: Examples of Differences between Test Ballot 2 and Test Ballot 202

Test item	Test Ballot 2	Test Ballot 202
Precinct	142	143
Ballot style	6	7
Contest used to contain unique value used to identify the test ballot during the review process.	Governor/Lieutenant Governor	U.S. Senate
Method used to make change on initial screen for contest	Two-touch	One-touch
Number of page backs to return to contest	2	1
Method used to make change after paging back to contest	Two-touch	Two-touch
Activate VOTE button prior to using the review screen to return to the contest	No	Yes
Selection for Attorney General	McCollum	Campbell
Selection for Constitutional Amendment 1	No	Undervote
Selection for Constitutional Amendment 8	No	No
Method used to make change using the review screen approach	Two-touch	Two-touch
Cast ballot from contest selection	No	Yes
Return to review screen and then cast ballot	Yes	No

Source: GAO.

Finally, we selected 10 random machines to be used for the ballot testing.¹⁹ One machine was selected from those that were used in early voting in the 2006 general election. The other nine were selected from those that used each of the ballot styles on election day in the 2006 general election.²⁰ For each election day machine, the assigned precinct was the same as the precinct where the machine was used during the 2006 general election. For the early voting machine, we needed to assign precincts for each ballot style. We used the precinct associated with the back-up machine used for election day testing as the precinct for that ballot style.²¹ If the first back-up machine was assigned the same precinct number as the primary election day machine, then we used the precinct associated with the second back-up machine. This approach was taken to maximize the number of precincts used in the testing efforts.

¹⁹ Details on the random selection can be found in appendix I.

²⁰ We excluded machines from one precinct that used two ballot styles instead of one.

²¹ In order to ensure that we could complete our tests even if a machine selected for testing failed to operate, our statistical sampling methodology generated a list of machines that could be used as replacements and still maintain the integrity of the testing process. These are referred to as "back-up" machines.

Process Used in Executing the Ballot Test

A two-person test team conducted the ballot testing. One tester read out aloud the steps called for in the test ballot while the other tester performed those actions. In order to ensure that all of the actions relating to the Florida-13 congressional race were performed as laid out in the test ballots, a two-person review team observed a video display of the test and compared the actions taken by the tester to those called for in the test ballot. Furthermore, after the testing was completed, another team reviewed the video recording of these tests to validate that the actions relating to the Florida-13 contest taken by the tester were consistent with those called for by the test ballots.²²

The criteria used to determine whether the test produced the expected result was derived from the Florida Voting System Standards.²³ Specifically, among other things, these standards require the system to allow the voter to (1) determine whether the inputs given to the system have selected the candidates that he or she intended to select, (2) review the candidate selections made by the voter, and (3) change any selection previously made and confirm the new selection prior to the act of casting the ballot. Furthermore, the system must communicate to the voter the fact that the voter has failed to vote in a race (undervote) and require the voter to confirm his or her intent to undervote before casting the ballot. During the ballot test, the actual system response was compared to the expected results by a review team and after the testing was completed another review team compared the video records to the test ballots to validate that the tests had been performed in accordance with test scripts for the Florida-13 contest.

At the beginning of testing on each iVotronic DRE, the machine was opened for voting and a zero tape was printed. After the casting of all test ballots on the machine, the machine was closed and a results tape was printed. The closing of the machine also writes the audit data to the compact flash card, including event data and ballot images. We examined the results tapes and compared the total votes cast for the Florida-13 contest against what was expected from the test ballots. We also kept

²² These two reviews identified two early voting and seven election day test ballots where the specified scripts were not followed exactly for the Florida-13 contest. Because these test ballots had not followed the test script for the Florida-13 contest exactly, they were retested. Accordingly, the testing efforts resulted in 233 actual ballots being cast.

²³ Florida Department of State, *Florida Voting System Standards*, Form DS-DE 101 (Jan. 12, 2005).

track of the total number of ballots handled by the machine, called the “protective count” of an iVotronic DRE, before and after the test and confirmed that the increase in protective count matched the number of test ballots cast on that machine.²⁴

Using the Unity election reporting manager, we read the compact flash cards and processed the audit data on each ballot test machine. We generated the ballot image log and examined the individual test ballots in the ballot image log. We looked for the unique identifier that was used for each test ballot and then confirmed that the ballot image reflected the correct selection for the Florida-13 race as called for by the test ballot. For example, the test script for Test Ballot 1 required the tester to (1) select a write-in candidate for U.S. Senate and (2) enter the value of “TB1” in the write-in field. Because only this test ballot used this value, we could review the ballot image log to determine what selection the voting machine recorded for the Florida-13 contest for the ballot showing “TB1” as the write-in candidate for U.S. Senate.²⁵

Finally, using the process discussed previously for firmware testing, the firmware on all machines used for ballot testing was validated to ensure these machines used the same firmware that had been certified by the Florida Division of Elections.

Results of Ballot Testing

After executing the ballot tests on the election day and early voting machines, we found that all 10 iVotronic DREs captured the votes for the Florida-13 race on the test ballots accurately. We used a unique identifier in a write-in field in each test ballot and verified that the iVotronic DRE accurately captured the tester's final selections in the Florida-13 race for each test ballot.

²⁴ The iVotronic DRE is designed to maintain a count of all ballots cast on a given machine and functions much like an automobile's odometer. The protective count can be used to help ensure that the election process did not lose any votes. For example, before a machine is sent to a precinct, the protective count is recorded. Accordingly, if the precinct's voting register show that 100 individuals voted, then the increase in the protective counts for all machines assigned to that precinct should increase by 100. This value can then be compared to the actual votes recorded in the election to ensure that the values are consistent; i.e., the results tape for the election shows that 100 votes have been accounted for during this election using this example precinct.

²⁵ In some cases, a test ballot had to be reentered because the original test did not follow all of the desired actions associated with the Florida-13 contest. In these cases, the value entered was made unique by adding a letter to the value, e.g., “TB1A”.

Testing 112 ways to select a candidate on a single machine also provided us some additional assurance that the volume of ballots cast on election day did not contribute to the undervote. We noted that casting 112 ballots on a single machine was more than the number of ballots cast on over 99 percent of the 1,415 machines used on election day.

**Deliberately
Miscalibrated
iVotronic DREs
Accurately Recorded
Displayed Ballots**

Because little was known about the effect of a miscalibrated machine on the behavior of an iVotronic DRE, we deliberately miscalibrated two iVotronic DREs using 10 different miscalibration methods to verify the functioning of the machine. Although the miscalibration made the machine more difficult to use, the 39 ballots used in this test confirmed that the system correctly recorded the displayed vote for the Florida-13 contest and did not appear to contribute to the undervote.

**Methodology for
Calibration Testing**

For the calibration testing, we judgmentally selected five different miscalibration patterns and repeated each pattern twice—once with a small amount of miscalibration and the second time with a large amount of miscalibration. The amount of miscalibration was also subjective—roughly 0.25 to 0.5 inch for a small amount and about 0.7 to 1 inch for a large miscalibration.

The miscalibration patterns are shown in the following figures.

Figure 6: Miscalibration Pattern 1: For Each Calibration Point, the Tester Touches a Point Shifted Diagonally Inward

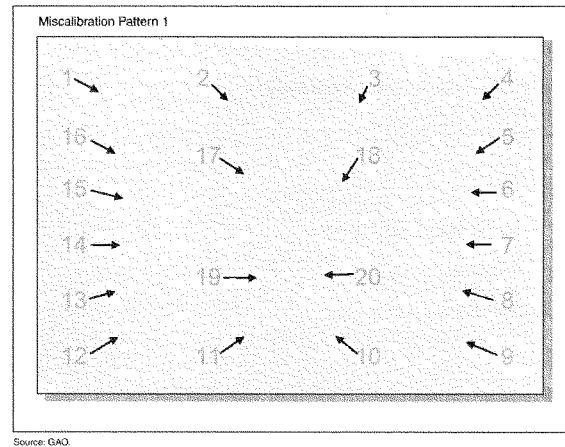
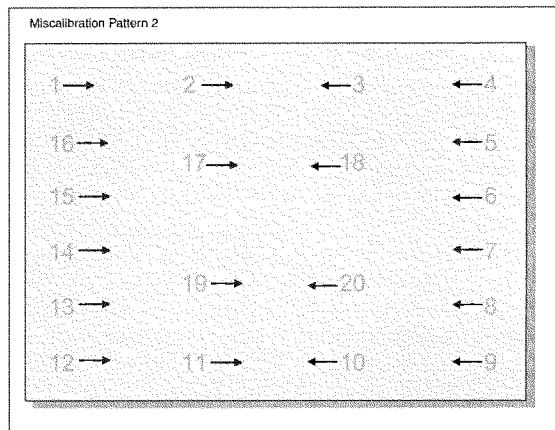
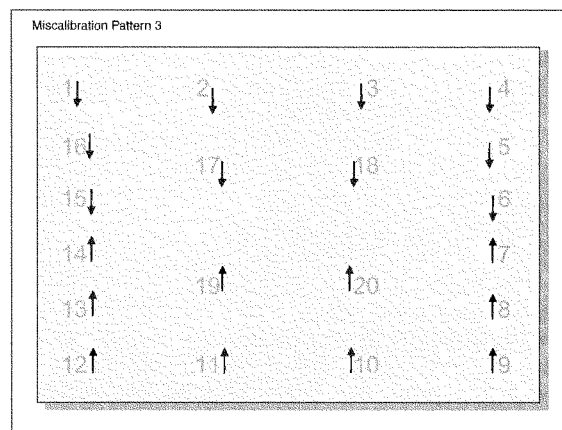


Figure 7: Miscalibration Pattern 2: For Each Calibration Point, the Tester Touches a Point Shifted Horizontally Inward



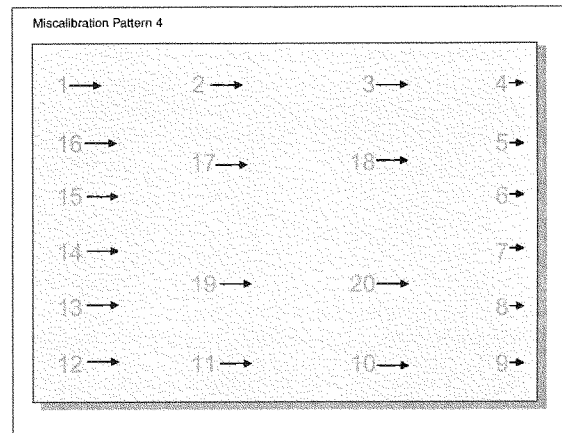
Source: GAO.

Figure 8: Miscalibration Pattern 3: For Each Calibration Point, the Tester Touches a Point Shifted Vertically Inward



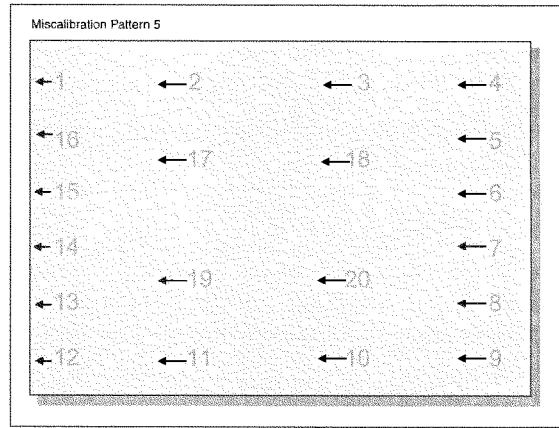
Source: GAO.

Figure 9: Miscalibration Pattern 4: For Each Calibration Point, the Tester Touches a Point Shifted Horizontally to the Right



Source: GAO.

Figure 10: Miscalibration Pattern 5: For Each Calibration Point, the Tester Touches a Point Shifted Horizontally to the Left



Source: GAO.

We conducted calibration testing on two different machines that were used for ballot testing.²⁶ As with ballot testing, at the beginning of testing of each machine, we opened the machine for voting and printed a zero tape. During the opening process, we calibrated the machine with one of the miscalibration patterns. After the machine was miscalibrated, we then executed at least three of the test ballots that were used during ballot testing on that machine for each test.²⁷ The test ballots were rotated among

²⁶ The approach used to select these machines is described in appendix I.

²⁷ In the testing of the first two miscalibration patterns for the first machine, all the test ballots used in the ballot testing for that machine were repeated. However, the individual performing the testing soon recognized the changes that were needed to compensate for the miscalibration. Accordingly, the tester did not make as many attempts to perform the desired function in the later cases as with the first three cases. Therefore, for the remaining eight miscalibration test patterns, we executed three test ballots per pattern because these cases produced the greatest likelihood of generating spurious touches before obtaining the desired selection.

the miscalibration patterns. For example, one of the machines had eight different ballot test scripts. The first three were used on one miscalibration pattern, the next three on another miscalibration pattern, and the final two plus the first one would be used on another miscalibration pattern. After the ballots were cast for one miscalibration pattern, the machine would be miscalibrated with another pattern. After the needed miscalibration patterns were tested on a machine, the iVotronic DRE was closed and a results tape was printed. The closing of the iVotronic DRE also wrote the audit data to the compact flash card.

During the testing, the tester was instructed to take whatever actions were necessary to achieve the desired result. For example, if the script called for the selection of Candidate A, then the tester would keep touching the screen until Candidate A was selected. A review team monitored the testing to ensure that (1) the proper candidate for the Florida-13 congressional race was ultimately selected and (2) the review screen showed this candidate selection when it was first presented.

As with the ballot test, we used the Unity election reporting manager to read the compact flash cards and processed the audit data on each ballot test machine. We generated the ballot image log and examined the individual test ballots in the ballot image log. We looked for the unique identifier that was used for each test ballot and then confirmed that the ballot image reflected the correct selection for the Florida-13 race as called for by the test ballot. After the testing had been completed, the expected results shown in the test ballot scripts were compared to the actual results contained in the ballot image log and the results tape using the same process discussed in the ballot testing methodology.

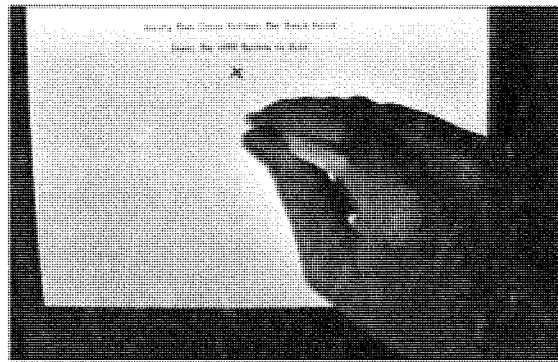
Results of Calibration Testing

The 39 ballots used in this test confirmed that the system correctly recorded the displayed vote for the Florida-13 contest. We also noted that the miscalibration clearly made the machines harder to use and during an actual election these machines would have probably been either recalibrated or removed from service once the voter brought the problem to the precinct's attention, according to a Sarasota County official who observed the tests.²⁸

²⁸ Our review of the election day records identified two reported cases on election day where the miscalibration of the iVotronic DRE led to its closure and discontinued use for the rest of the day.

Figure 11 shows an example of effects of our miscalibration efforts on the screen that is used to confirm the calibration results. Specifically, the stylus points to where the tester is touching the screen while the "X" on the screen shows where the machine indicated the stylus was touching the screen.²⁹ In a properly calibrated machine, the stylus and the "X" are basically at the same point.

Figure 11: Example of the Effects of a Miscalibrated Machine on the Calibration Screen

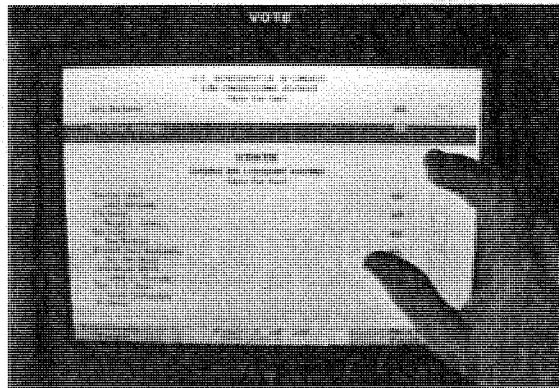


Source: GAO.

Figure 12 shows an example of where the tester is touching the screen to make a selection and how this "touch" is translated into a selection. As can be seen, the finger making the selection is touching a position that in a properly calibrated machine would not result in the selection shown. However, the machine clearly shows the candidate selected and our tests confirmed that for the 39 ballots tested, the candidate actually shown by the system as selected (in this example, the shaded line) was the candidate shown on the review screen, as well as the candidate that received the vote when the ballot was cast.

²⁹ While votes are normally cast using fingers on the touch screen, a stylus is normally used during the calibration process.

Figure 12: Example of the Effects of a Miscalibrated Machine on a Candidate Selection



Source: GAO.

Conclusions

Our tests showed that (1) the firmware installed in a statistically selected sample of machines used by Sarasota County during the 2006 general election matched the firmware certified by the Florida Division of Elections, and we confirmed that when the manufacturer rebuilt the iVotronic 8.0.1.2 firmware from the escrowed source code, the resulting firmware matched the certified version of firmware held in escrow, (2) the machines properly displayed, recorded, and counted the selections for all test ballots cast during the ballot testing involving the 112 common ways a voter may interact with the system to cast a ballot for the Florida-13 race, and (3) the machines accurately recorded the test ballots displayed on deliberately miscalibrated machines. The results of these tests did not identify any problems that would indicate that the iVotronic DREs were responsible for the undervote in the Florida-13 race in the 2006 general election.

As we noted when we proposed these tests, even after completing these tests, we do not have absolute assurance that the iVotronic DREs did not

play any role in the large undervote. Absolute assurance is impossible to achieve because we are unable to recreate the conditions of the election in which the undervote occurred. Although the test results cannot be used to provide absolute assurance, we believe that these test results, combined with the other reviews that have been conducted by Florida, GAO, and others, have significantly reduced the possibility that the iVotronic DREs were the cause of the undervote. At this point, we believe that adequate testing has been performed on the voting machine software to reach this conclusion and do not recommend further testing in this area. Given the complex interaction of people, processes, and technology that must work effectively together to achieve a successful election, we acknowledge the possibility that the large undervote in Florida's 13th Congressional District race could have been caused by factors such as voters who intentionally undervoted, or voters who did not properly cast their ballots on the iVotronic DRE, potentially because of issues relating to interaction between voters and the ballot.

Comments

We provided draft copies of this statement to the Secretary of State of Florida and ES&S for their review and comment. We briefed the Sarasota County Supervisor of Elections on the contents of this statement and asked for their comments. The Florida Department of State provided technical comments, which we incorporated. ES&S and the Sarasota County Supervisor of Elections provided no comments.

Mr. Chairman, this completes my prepared statement. I would be happy to respond to any questions you or other Members of the Task Force may have at this time.

Contact and Acknowledgments

For further information about this statement, please contact Naba Barkakati at (202) 512-6412 or barkakatin@gao.gov. Contact points for our Office of Congressional Relations and Public Affairs may be found on the last page of this statement. Other key contributors to this statement include James Ashley, Stephen Brown, Francine Delvecchio, Cynthia Grant, Geoffrey Hanilton, Richard Hung, Douglas Manor, John C. Martin, Jan Montgomery, Daniel Novillo, Deborah Ortega, Keith Rhodes, Sidney Schwartz, Patrick Tobo, George Warnock, and Elizabeth Wood. We also appreciate the assistance of the House Recording Studio in the video recording of the tests.

Appendix I: Methodology for Selecting IVotronic DREs for GAO Testing

Each of the three tests—firmware verification, ballot, and calibration—was conducted on a sample of the 1,499 iVotronic DREs that recorded votes during the 2006 general election in Sarasota County, Florida. We selected 115 iVotronic DREs for the firmware test, 10 for the ballot test, and 2 for the calibration test. Appendix II contains the serial numbers of the iVotronic DREs that were tested.

Firmware Test Sample

We selected a stratified random probability sample of iVotronic DREs from the population of 1,499. The sample was designed to allow us to generalize the results of the firmware sample to the population of iVotronic DREs used in this election. We stratified the population into two strata based on whether the machines had been sequestered since the 2006 general election. There were a total of 818 machines that were sequestered and 681 machines that had been used in subsequent elections. The population and sample are described in table 3.

We calculated the sample size in each stratum using the hypergeometric distribution to account for the relatively small populations in each stratum. We determined each sample size to be the minimum number of machines necessary to yield an upper bound of 7.5 percent, at the 99 percent confidence level, if we observed zero failures in the firmware test. Assuming that we found no machines using an uncertified firmware version, these sample sizes allowed us to conclude with 99 percent confidence that no more than 7.5 percent of the machines in each stratum were using uncertified firmware. Further, this sample allowed us to conclude that no more than 4 percent of the 1,499 iVotronic DREs were using uncertified firmware, at the 99 percent confidence level.

Table 3: Description of the Stratified Population and Sample Sizes for the Firmware Test

Stratum	Population size	Sample size
Sequestered machines	818	58
Non-sequestered machines	681	57
Total	1,499	115

Source: GAO based on analysis of Sarasota County voting data.

An additional five sequestered machines and five non-sequestered machines were selected as back-up machines should there be problems in locating the selected machines or some other problem that prevented testing them.

Ballot Test Sample

We randomly selected a total of 10 machines from the population of 1,384 machines that were not selected in the firmware test sample. This sample size is not sufficient to allow us to make direct generalizations to the population. However, if we are reasonably confident that the same software is used in all 1,499 machines, then we are more confident that the results of the other tests on a small number of machines can be used to obtain increased assurance that the iVotronic DREs did not cause the undervote. We randomly selected one machine from each of the nine ballot styles used during the general election and one machine from the machines used for early voting.¹ In case of problems in operating or locating the machines, we also selected randomly selected two additional machines for each ballot style and for early voting.

Calibration Test Sample

The two iVotronic DREs selected for calibration testing were selected from those tested in the ballot test. Because the machines used for the ballot tests included an ADA machine and "standard" machines, we selected one of each for calibration testing. Although we did not test the ADA capabilities of the ADA machine (e.g., the audio ballots), we found that the on-screen appearance of selections on the ADA machine differed slightly from that on non-ADA machines. For example, the standard non-ADA machine displayed a blue bar across the screen and an X in the box next to the candidate's name when a selection was made, while an ADA machine only showed an X in the box next to the candidate's name.

¹ We also excluded those election day machines from one precinct that supported two different ballot styles.

Appendix II: List of Machines Tested by GAO

Table 4 table lists the iVotronic DREs that were tested by GAO. For each machine, the table shows whether the machine was sequestered and what type of testing was conducted on the machine.

Serial number	Machine sequestered	Type of testing conducted
V0105178	No	Firmware testing
V0105203	No	Firmware testing
V0105222	Yes	Firmware testing
V0105255	No	Firmware testing
V0105305	No	Firmware testing
V0105351	No	Firmware testing
V0105379	Yes	Firmware testing
V0105390	Yes	Firmware testing
V0105396	No	Firmware testing
V0105422	Yes	Firmware testing
V0105481	No	Firmware testing
V0105499	No	Firmware testing
V0105500	Yes	Firmware testing
V0105524	No	Firmware testing
V0105526	Yes	Firmware testing
V0105563	No	Firmware testing
V0105573	No	Firmware testing
V0105607	No	Firmware testing
V0105613	Yes	Firmware testing
V0105623	Yes	Firmware testing
V0105651	No	Firmware testing
V0105656	No	Firmware testing
V0105661	Yes	Firmware testing
V0105664	Yes	Firmware testing
V0105743	No	Firmware testing
V0105848	No	Firmware testing
V0105873	Yes	Firmware testing
V0105874	No	Firmware testing
V0105894	Yes	Firmware testing
V0105903	Yes	Firmware testing
V0105906	Yes	Firmware testing

Appendix II: List of Machines Tested by GAO

Serial number	Machine sequestered	Type of testing conducted
V0105923	Yes	Firmware testing
V0105964	Yes	Firmware testing
V0105971	Yes	Firmware testing
V0105992	Yes	Firmware testing
V0106001	Yes	Firmware testing
V0106016	No	Firmware testing
V0106024	Yes	Firmware testing
V0106025	Yes	Firmware testing
V0106034	No	Firmware testing
V0106064	No	Firmware testing
V0106068	No	Firmware testing
V0106069	Yes	Firmware testing
V0106084	No	Firmware testing
V0106087	Yes	Firmware testing
V0106126	No	Firmware testing
V0106156	No	Firmware testing
V0106191	Yes	Firmware testing
V0106203	Yes	Firmware testing
V0106254	Yes	Firmware testing
V0106264	Yes	Firmware testing
V0106265	No	Firmware testing
V0106274	No	Firmware testing
V0106282	No	Firmware testing
V0106343	No	Firmware testing
V0106368	No	Firmware testing
V0106377	No	Firmware testing
V0106396	Yes	Firmware testing
V0106445	No	Firmware testing
V0106461	No	Firmware testing
V0106475	Yes	Firmware testing
V0106478	Yes	Firmware testing
V0106486	No	Firmware testing
V0106507	No	Firmware testing
V0106522	Yes	Firmware testing
V0106525	Yes	Firmware testing
V0106531	No	Firmware testing

Appendix II: List of Machines Tested by GAO

Serial number	Machine sequestered	Type of testing conducted
V0106552	No	Firmware testing
V0106585	No	Firmware testing
V0106586	No	Firmware testing
V0106588	No	Firmware testing
V0106602	No	Firmware testing
V0106615	Yes	Firmware testing
V0106656	Yes	Firmware testing
V0106658	Yes	Firmware testing
V0106661	No	Firmware testing
V0106667	Yes	Firmware testing
V0106681	No	Firmware testing
V0106711	Yes	Firmware testing
V0106718	Yes	Firmware testing
V0106740	No	Firmware testing
V0106744	No	Firmware testing
V0106833	Yes	Firmware testing
V0106940	Yes	Firmware testing
V0106864	No	Firmware testing
V0106865	Yes	Firmware testing
V0106878	Yes	Firmware testing
V0106881	Yes	Firmware testing
V0106883	No	Firmware testing
V0106907	No	Firmware testing
V0106933	Yes	Firmware testing
V0106936	Yes	Firmware testing
V0106949	Yes	Firmware testing
V0106965	Yes	Firmware testing
V0107000	No	Firmware testing
V0107011	No	Firmware testing
V0107020	No	Firmware testing
V0107042	Yes	Firmware testing
V0107045	No	Firmware testing
V0107053	Yes	Firmware testing
V0107077	Yes	Firmware testing
V0107082	No	Firmware testing
V0107094	Yes	Firmware testing

Appendix II: List of Machines Tested by GAO

Serial number	Machine sequestered	Type of testing conducted
V0107108	Yes	Firmware testing
V0107138	Yes	Firmware testing
V0107143	No	Firmware testing
V0107147	Yes	Firmware testing
V0110355	Yes	Firmware testing
V0111064	No	Firmware testing
V0113816	No	Firmware testing
V0114087	Yes	Firmware testing
V0114415	Yes	Firmware testing
V0117658	No	Firmware testing
V0118183	No	Firmware testing
V0118293	Yes	Firmware testing
V0105386	Yes	Early voting ballot testing
V0105266	Yes	Election day ballot testing
V0105694	No	Election day ballot testing
V0106082	Yes	Election day ballot testing
V0106145	Yes	Election day ballot testing
V0106247	Yes	Election day ballot testing
V0106509	No	Election day ballot testing and calibration testing
V0106671	Yes	Election day ballot testing
V0117861	No	Election day ballot testing and calibration testing
V0117951	No	Election day ballot testing

Source: GAO.

GAO's Mission

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**Official Task Force Meeting
February 8, 2008**

Motion #7 – Dismissing the Election Contest in the Thirteenth Congressional District of Florida

I move that the Chairman be authorized and directed to report to the Committee that the Task Force has completed its investigation related to the election of a Representative from the 13th Congressional District of Florida to the House of Representatives, and I move further that the Chairman report to the Committee the Task Force's recommendation that the election contest in the 13th District of Florida be dismissed (offered by Representative Zoe Lofgren).

Member	Vote
Rep. Gonzalez	Y
Rep. Lofgren	Y
Rep. McCarthy	Y

MARKUP OF HR 5159, THE CAPITOL VISITOR CENTER ACT OF
2008; CONSIDERATION OF AN ELECTION CONTEST; AND
CONSIDERATION OF AN AMENDMENT TO REGULATIONS
GOVERNING THE USE OF OFFICIAL FUNDS BY MEMBERS,
COMMITTEES, AND OFFICERS OF THE U.S. HOUSE OF
REPRESENTATIVES

MEETING

BEFORE THE

COMMITTEE ON HOUSE
ADMINISTRATION
HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

SECOND SESSION

HELD IN WASHINGTON, DC, FEBRUARY 12, 2008

Printed for the use of the Committee on House Administration



Available on the Internet:

<http://www.gpoaccess.gov/congress/house/administration/index.html>

110TH CONGRESS
2D SESSION

H. RES. _____

Dismissing the election contest relating to the office of Representative from
the Thirteenth Congressional District of Florida.

IN THE HOUSE OF REPRESENTATIVES

Mr. BRADY of Pennsylvania, from the Committee on House Administration,
reported the following resolution; which was referred to

RESOLUTION

Dismissing the election contest relating to the office of Representative from the Thirteenth Congressional District of Florida.

- 1 *Resolved*, That the election contest relating to the of-
- 2 fice of Representative from the Thirteenth Congressional
- 3 District of Florida is dismissed.

**Committee on House Administration Meeting
February 12, 2008**

Motion #1 – Dismissing the Election Contest in the Thirteenth Congressional District of Florida

Mr. Chairman, I move that the Committee order reported favorably to the House an original resolution, the text of which is before us, to dismiss the election contest in the 13th District of Florida (offered by Representative Charles Gonzalez).

Member	Vote
Rep. Brady	Y
Rep. Lofgren	Y
Rep. Gonzalez	Y
Rep. Capuano	Y
Rep. Susan Davis	Not Present
Rep. Artur Davis	Not Present
Rep. Ehlers	Y
Rep. Lungren	Y
Rep. McCarthy	Y

APPENDIX C—INVESTIGATION BY GAO

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Engagement Plan for Review of Voting Equipment Used in Florida's 13th Congressional District During the 2006 General Election

High-level objective: To what extent could the voting machines have contributed to the large undervote? Ascertain whether additional testing is needed to determine whether the voting systems contributed to the undervote.

Scope: Voting machines and equipment used in Sarasota County. Though Florida's 13th Congressional District includes voters from five counties (Charlotte, Desoto, Hardee, Manatee, and Sarasota), because the contestant's claims and the Florida state audit focus on Sarasota County, we will also limit our scope to Sarasota County.

Job Objectives: (1) What voting systems and equipment were used in Sarasota County and what processes governed their use? (2) What is the scope of the undervote in Sarasota County? (3) To what extent were tests conducted on the voting systems in Sarasota County prior to the general election and what were the results of those tests? (4) Considering the tests that were conducted on the voting systems from Sarasota County after the general election, are additional tests needed to determine whether the voting systems contributed to the undervote?

Approach:

- 1) What voting systems and equipment were used in Sarasota County and what processes governed their use?
 - a) Identify voting systems and equipment used in Sarasota County during the 2006 general election, including vote casting machines and vote tabulation machines. Identification should include versions numbers of all hardware and software in use.

Information sources: Sarasota County Supervisor of Elections.
 - b) Verify that the voting systems were approved for use by the Florida Division of Elections and the Sarasota County Supervisor of Elections.

Information sources: Sarasota County Supervisor of Elections, Florida Division of Elections, Florida and county requirements for such approvals.

As approved by the FL-13 Task Force on June 14, 2007

- c) What procedures were used to set-up and operate voting systems and equipment for the 2006 general election? Include systems and equipment used for election day, early, and absentee voting.

Information sources: Sarasota County Supervisor of Elections, Florida and county requirements for such procedures.

- d) How are votes tallied and certified in Sarasota County, including recount procedures?

Information sources: Sarasota County Supervisor of Elections, Florida and county requirements for such procedures.

- e) What different ballot styles were used in Sarasota County during the general election?

Information sources: Sarasota County Supervisor of Elections.

- f) What problems were reported regarding the performance and use of the voting systems during the general election?

Information sources: Problem reports from Sarasota County Supervisor of Elections, submissions from contestant and contestee.

- g) What is the current disposition of the voting systems and equipment that were used on election day, including hardware, software, and any removable media? How would GAO gain access to such machines and equipment?

Information sources: Sarasota County Supervisor of Elections.

2) What is the scope of the undervote in Sarasota County?

- a) Analyze the distribution of undervotes in Sarasota County in the 2006 general election to identify any patterns, such as by ballot style, precincts, or geography.

Information sources: Machine-level results data from Sarasota County Supervisor of Elections.

- b) Do the certified vote totals from Sarasota County for the 13th Congressional District race match those recorded by the machines?

Information sources: Vote image log files and certified vote totals from Sarasota County Supervisor of Elections.

- c) How does the undervote in the 13th Congressional District race compare to other races in the 2006 general election and in previous elections that used these voting systems and equipment?

Information sources: Data on the history of usage of the voting systems and equipment from the Sarasota County Supervisor of Elections, election results from prior general elections.

- 3) To what extent were tests conducted on the voting systems in Sarasota County prior to the general election and what were the results of those tests?

- a) Identify and review testing procedures conducted by the equipment manufacturers prior to the conduct of the election. How are problems identified by the manufacturers communicated to users?

Information sources: ES&S

- b) Identify and review testing procedures conducted by the Florida Division of Elections prior to the conduct of the election.

Information sources: Florida Voting System Standards, Florida Division of Elections, test plans and reports

- c) Identify and review testing procedures conducted by the Sarasota County Supervisor of Elections prior to the conduct of the election.

Information sources: Sarasota County Supervisor of Elections, test plans and reports

- 4) Considering the tests that were conducted on the voting systems from Sarasota County after the general election, are additional tests needed to determine whether the voting systems contributed to the undervote?

- a) Assess the conduct of the parallel testing.

Information sources: Florida Division of Elections, Sarasota County Supervisor of Elections, audit team, state audit report, submissions from contestant and contestee.

- b) Assess the conduct of the independent source code review conducted at Florida State University at the Security and Assurance in Information Technology (SAIT) lab.

Information sources: Unredacted software review and security analysis report, statement of work, Florida Division of Elections, SAIT team, submissions from contestant and contestee.

- c) Assess the conduct of the examination of election procedures and practices.

Information sources: Florida Division of Elections, Sarasota County Supervisor of Elections, audit team, state audit report, submissions from contestant and contestee.

- d) Are there any areas where additional testing could help determine whether the voting systems contributed to the undervote?

Information sources: Analysis of the testing conducted before and after the general election to identify any tests that were not conducted or were conducted in an ineffective manner.

- e) For any additional tests, identify the test environment and test protocol to be used, as well as the resources needed to conduct such testing.

Information sources: Analysis of the testing conducted before and after the general election. Availability of specific voting systems in Sarasota County to meaningfully recreate conditions from the 2006 general election.

High-level Schedule:

June 2007 – Initiate contacts with the involved entities (Florida Division of Elections, Sarasota County Supervisor of Elections, SAIT team, ES&S, and others, as needed). Begin data collection and meetings. Review Task Force submissions.

July 2007 – Continue data collection and meetings. Begin data analysis of undervote data. Assess voting system tests conducted before and after the election.

August 2007 – Continue analysis and follow-up on any needed data collection. Identify any additional needed tests and identify necessary resources and environment.

September 2007 – Finalize findings. Prepare and deliver briefing on findings to Task Force.

Note that this schedule depends on the timely cooperation of all involved entities to provide GAO the relevant documentation or information. Should GAO not be able to gain the timely cooperation of an involved entity, we will report this to the Task Force.

June 15, 2007

GAO Asked to Examine Contested Voting Machines and Report Back July 27

By Rachel Kapochunas, CONGRESSIONAL QUARTERLY

A House Administration Committee task force has asked the Government Accountability Office (GAO) to complete its examination of disputed voting machines quickly and report findings by July 27.

The GAO will scrutinize equipment used in Sarasota County, Fla., where Democrat Christine Jennings is contesting her loss in last year's 13th Congressional District election.

GAO investigators are assigned to determine to what extent machines were responsible for the lower number of votes cast for Congress than for other races.

Jennings contends electronic voting machine errors are to blame for 18,000 ballots being recorded without a congressional choice.

The task force agreed last month to allow the GAO to design a plan to investigate the election, in which Republican Vern Buchanan was certified the winner by 369 votes.

The goal of completing work July 27 put the GAO on a faster timetable; the agency had suggested filing a report in September.

Rep. Charlie Gonzalez, D-Texas, chairman of the three-member task force, said the schedule that now has been set "respects the need to arrive at a solution sooner rather than later."

Jennings also has contested the election outcome in Florida courts, where she has appealed a ruling in the Republican's favor. Last month, Jennings filed a motion to stay her appeal, saying the move was meant to defer to the congressional investigation.

Florida Republican Party chairman Jim Greers said that should be interpreted as Jennings trying to avoid "the embarrassment of yet another court ruling against her."

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BRADENTON HERALD

Found on Bradenton.com
The Bradenton Herald (Florida)

June 15, 2007 Friday

D-13 review may end by August; GAO tells task force

SECTION: FRONT; Pg. 3**LENGTH:** 432 words

July 27 'target date' is unlikely to be met

Herald Washington Bureau

Investigators told a task force looking at the disputed Sarasota congressional race they will try to wrap up an initial review before Congress leaves town for its August break.

But the Government Accountability Office, which was asked last month by the task force to look at whether malfunctioning touch-screen voting machines were at fault in the race, noted Thursday that it could take longer than a July 27 "target date" to finish the preliminary investigation.

"We cannot promise we will be completely done," Nabajyoti Barkakati, a senior technologist with the GAO told the task force. "If we are lucky and everything falls into place, perhaps we will have some useful information by July 27."

The agency initially estimated it would take until September for the review, which includes reviewing studies of the voting machines. The agency plans to determine whether it will need to conduct additional testing on its own.

House Democrats had hoped to complete the review in 45 days. They noted they didn't want to rush the independent agency, but several times noted that they wanted to resolve the case as soon as possible.

"They're going to take the time they need, but I want them to understand the sense of urgency we have," said Rep. Zoe Lofgren, D-Calif.

At issue is whether computers were to blame for why more than 18,000 ballots cast in Sarasota County recorded no vote for either candidate in November's District 13 congressional election. Republican Rep. Vern Buchanan was certified as the winner with a 369-vote margin, but his opponent, Democrat Christine Jennings, has appealed the results, saying the computers malfunctioned.

Though Buchanan was seated in January, Democrats noted that his election was being challenged and had held out some hope of seating Jennings. She said Thursday it was premature to talk about whether she'll challenge Buchanan for re-election next year.

"This is my focus right now," she said.

Task force chairman Rep. Charlie Gonzalez, D-Texas, said the sense of urgency was unrelated to declaring anyone a winner.

"As a practical matter, do you really want a whole year to go by?" Gonzalez said. "There has to be some closure, some finality to this situation. It doesn't serve any useful purpose to prolong the situation."

Buchanan's attorney, Hayden Dempsey, said his client welcomes the review.

"We're confident that the GAO is going to come to the same conclusion that expert after expert, report after report has found, which is that there were no problems with the machines," Dempsey said.

LOAD-DATE: June 15, 2007

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PUBLICATION-TYPE: Newspaper

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United States Government Accountability Office
Washington, DC 20548

June 15, 2007

The Honorable Kathy Dent
Sarasota County Supervisor of Elections
101 South Washington Blvd.
Sarasota, FL 34236-6940

Dear Supervisor Dent:

As requested by the Task Force on Florida-13, Committee on House Administration, the Government Accountability Office is conducting a review of the voting systems and equipment used in the contested 2006 election in the 13th Congressional District of Florida. In particular, we will be examining the extent to which the voting systems and equipment used in Sarasota County could have contributed to the undervote recorded in the race. During our review, we plan to address the following questions:

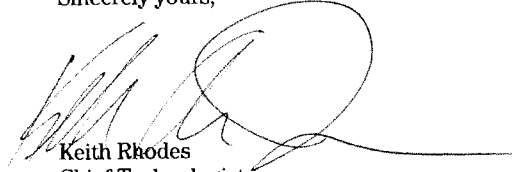
- 1) What voting systems and equipment were used in Sarasota County and what processes governed their use?
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- 4) Considering the tests that were conducted on the voting systems from Sarasota County after the general election, are additional tests needed to determine whether the voting systems contributed to the undervote?

During the course of our work, we plan to contact relevant representatives from government, industry, and academia. Besides Sarasota County, we also plan to conduct work at the Florida Department of State, Florida State University (Security and Assurance in Information Technology Laboratory), and other organizations, as applicable.

We are beginning work on these issues immediately and will be contacting your office the week of June 18, 2007 to begin our information collection process and make meeting arrangements. This study will be conducted under the direction of Keith Rhodes, Chief Technologist and Director, Center for Technology and Engineering, Applied Research and Methods, 202-512-6412 (rhodesk@gao.gov).

If you have any questions or need additional information, please contact Naba Barkakati, Senior-Level Technologist, at (202)-512-4499 (barkakatin@gao.gov) or Richard Hung, Assistant Director, at (202)-512-8073 (hungr@gao.gov).

Sincerely yours,



Keith Rhodes
Chief Technologist
Director, Center for Technology and Engineering



June 15, 2007

The Honorable Kurt S. Browning
Secretary of State
Florida Department of State
R.A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399-0250

Dear Secretary Browning:

As requested by the Task Force on Florida-13, Committee on House Administration, the Government Accountability Office is conducting a review of the voting systems and equipment used in the contested 2006 election in the 13th Congressional District of Florida. In particular, we will be examining the extent to which the voting systems and equipment used in Sarasota County could have contributed to the undervote recorded in the race. During our review, we plan to address the following questions:

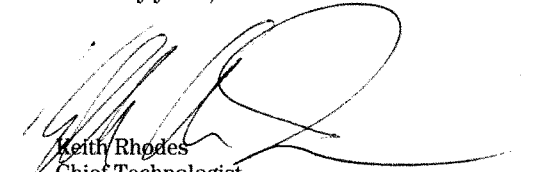
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Sincerely yours,



Keith Rhodes
Chief Technologist
Director, Center for Technology and Engineering

cc: Amy Tuck, Director, Elections Division



United States Government Accountability Office
Washington, DC 20548

June 15, 2007

Aldo Tesi
President and Chief Executive Officer
Election Systems & Software, Inc. (ES&S)
11208 John Galt Blvd.
Omaha, NE 68137

Dear Mr. Tesi:

As requested by the Task Force on Florida-13, Committee on House Administration, the Government Accountability Office is conducting a review of the voting systems and equipment used in the contested 2006 election in the 13th Congressional District of Florida. In particular, we will be examining the extent to which the voting systems and equipment used in Sarasota County could have contributed to the undervote recorded in the race. During our review, we plan to address the following questions:

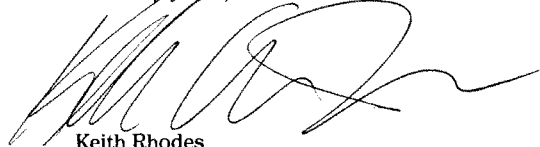
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Sincerely yours,

A handwritten signature in black ink, appearing to read 'KR', with a long horizontal flourish extending to the right.

Keith Rhodes
Chief Technologist
Director, Center for Technology and Engineering

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The Bradenton Herald (Florida)

Distributed by McClatchy-Tribune Business News

July 25, 2007 Wednesday

GAO makes 2nd visit to inspect D-13 voting

BYLINE: Stacey Eidson, The Bradenton Herald, Fla.**SECTION:** STATE AND REGIONAL NEWS**LENGTH:** 405 words

Jul. 25--SARASOTA -- On the same day that Democrat Christine Jennings announced she was planning to run again for the 13th Congressional District seat, representatives from the Government Accountability Office were in town investigating Sarasota County's voting machines.

Supervisor of Elections Kathy Dent said officials from the GAO, Congress' investigative arm, arrived in Sarasota last Thursday to review the county's controversial touch-screen voting machines.

The meeting Thursday in Sarasota was the second visit by the GAO team since a House committee task force and the GAO began probing into Jennings' claims that the county's voting machines cost her the District 13 election last November.

U.S. Rep. Vern Buchanan, R-Sarasota, was certified the winner in the race by 369 votes, but the election results revealed more than 18,000 undervotes, or blank votes, in the race.

A state audit and source code review of the machines found no malfunctions that could have caused the large percentage of undervotes, but the House task force and GAO are reviewing the election.

"They have been here twice," Dent said Tuesday, referring to the GAO team. "They flew in on Thursday, stayed all day and flew back out on Thursday night."

The GAO team was reviewing the equipment and procedures of the elections office, Dent said.

"They looked at our security procedures, they looked at the iVotronics (voting machines), and they looked at how we actually program a ballot," Dent said.

The GAO is scheduled to meet with the House task force later this week in a hearing that is closed to the public, but will meet publicly Aug. 3.

Earlier this month, the Sarasota County Commission approved spending approximately \$3 million to replace the county's touch-screen voting machines with optical scanners that provide a paper trail. The new machines, manufactured by Diebold Election Systems, are similar to those used in Manatee County and are scheduled to be in place by 2008.

AUG 2007

Stacey Eidson, Herald reporter, can be reached at 708-7908.

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Roll Call

July 30, 2007 Monday

GAO Needs More Time on Fla. Vote

BYLINE: Matthew Murray, ROLL CALL STAFF**LENGTH:** 671 words

The Government Accountability Office warned a special House task force last week that an upcoming progress report will offer few conclusions about a still-contested Florida House race and that agency experts will need to dig deeper into whether voting machines were on the fritz in November.

Prior to the August recess, "it does not appear that there will be a definitive answer from GAO as far as what caused the 'undervotes,'" the task force's chairman, Rep. Charlie Gonzalez (D-Texas), told reporters on Friday. "There were two areas in which [the agency] did express that there may be some limitations, and they were looking as to whether they should expand on that."

The GAO's preliminary assessment, scheduled to be delivered at a hearing Friday, is an attempt by Democrats to settle alleged undervotes in last year's contest between banker Christine Jennings (D) and now-Rep. Vern Buchanan (R-Fla.), which was decided by 369 votes.

Although Florida election officials certified Buchanan's win, Jennings and some outside election experts continue to claim malfunctioning electronic voting machines led to thousands of votes going uncounted.

The House seated Buchanan in January, but Democrats warned they would pay close attention to progress in Jennings' state court proceedings. Anything untoward, then-House Administration Chairwoman Juanita Millender-McDonald (D-Calif.) said, and her committee would not hesitate to step in.

"Now on appeal to your court is the question of access to this evidence," Millender-McDonald wrote to a Florida appeals court judge on committee letterhead in January. "[The case] bears decisively on the prospect of conclusively establishing who was duly elected on Nov. 7."

Millender-McDonald died in April. The panel is now chaired by Rep. Robert Brady (D-Pa.).

After months of appeals - and hundreds of thousands of dollars in legal fees - Jennings' campaign recently abandoned attempts to gain access to the inner workings of the electronic voting machines, which some speculate may be the linchpin to determining whether votes disappeared. The outside vendor that manufactured the equipment balked at Jennings' pleas to provide its computers' source code, arguing - in the end, successfully - that offering up such DNA would violate the company's right to protect its proprietary information.

A Florida appeals court last month upheld a lower court's decision denying Jennings' request for the source code, a ruling that essentially ended Jennings'

August 2007

hopes of resolving the alleged missing votes through the court system.

Meanwhile, with Jennings' case stalled for months in the state court, the House Administration Committee earlier in the year convened a special elections subcommittee chaired by Gonzalez to monitor Jennings' case. In early May 2007, the panel voted to have the GAO's computer experts explore the allegations.

"I think we need to put this to rest," Rep. Zoe Lofgren (D-Calif.) said at the time.

Gonzalez said Friday that the equipment's manufacturer, as well as Florida state and local election officials, are cooperating with the GAO's investigation.

Originally expected to take weeks, GAO officials warned the panel in mid-June that it could take as long as six months - or perhaps even longer, depending on what its experts unearth - to sort through the facts of the case. The agency was ordered to give a comprehensive update of its findings before the gavel dropped for the August recess.

Despite few hard-and-fast conclusions for the time being, Gonzalez said Friday that he is certain the agency ultimately will deliver in its investigation, which could cost \$1 million or more.

"My sense is that GAO ... will be able to provide some answers. To the extent of the testing that was conducted - or additional testing that may be required - will provide us with answers about whether the machines malfunctioned and were a contributing factor to the undervote," Gonzalez said. "We will have an answer, for sure."

Jennings announced in July that she is challenging Buchanan in 2008.

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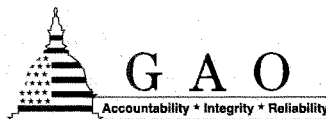
Statement before the Task Force on
Florida-13, Committee on House
Administration, House of Representatives

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ELECTIONS

Further Testing Could Provide Increased but Not Absolute Assurance That Voting Systems Did Not Cause Undervotes in Florida's 13th Congressional District

Statement of Dr. Nabajyoti Barkakati
Senior-Level Technologist
Applied Research and Methods



GAO-08-97T

October 2, 2007

ELECTIONS

Further Testing Could Provide Increased but Not Absolute Assurance That Voting Systems Did Not Cause Undervotes in Florida's 13th Congressional District

Highlights

Highlights of GAO's OCT 1, a statement before the Task Force on Florida's Committee on House Administration, House of Representatives

Why GAO Did This Study

In November 2006, about 15,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District (FL-13). After the recounting of the election results in the House of Representatives, the task force unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. GAO agreed with the task force on an engagement plan, including the following review objectives:

- (1) What voting systems were used in Sarasota County and what processes governed their use?
- (2) What was the scope of the undervote in Sarasota County in the general election?
- (3) What tests were conducted on the voting systems in Sarasota County prior to the general election and what were the results of those tests?
- (4) Considering the voting systems tests conducted after the general election, are additional tests needed to determine whether the voting systems contributed to the undervote? To conduct its work, GAO met with officials from the State of Florida, Sarasota County, and Election Systems and Software (ESS&S)—the voting systems manufacturer—and reviewed voting systems test documentation. GAO analyzed election data to characterize the undervote. On the basis of its assessments of prior testing and other activities, GAO identified potential additional tests for the Sarasota County voting systems.

To view the full product, including the scope and methodology, click on OCT-10-07. For more information, contact Keith Menden at (301) 612-6411 or kmdenden@gao.gov, or Heidi Buckwalter at (301) 612-6388 or hwbuckwalter@gao.gov.

What GAO Found

In the 2006 general election, Sarasota County used voting systems manufactured by ES&S, specifically iVotronic direct recording electronic (DRE) voting systems during early and election day voting and the Unity election management system, which handles the election administration functions, such as ballot design and election reporting.

GAO's analysis of the 2006 general election data from Sarasota County did not identify any particular voting machines or machine characteristics that could have caused the large undervote in the FL-13 race. The undervotes in Sarasota County were generally distributed across all machines and precincts.

GAO's analysis found that some of the prior tests and reviews conducted by the State of Florida and Sarasota County provide assurance that certain components of the voting systems in Sarasota County functioned correctly, but they are not enough to provide reasonable assurance that the iVotronic DREs did not contribute to the undervote. Specifically, GAO found that assurance is lacking in three areas, and proposes that tests be conducted to address those areas. First, because there is insufficient assurance that the firmware in all the iVotronic DREs used in the election matched the certified version held by the Florida Division of Elections, GAO proposes that a firmware verification test be conducted on a representative sample of 115 (of the 1,499) machines that were used in the general election. Second, because an insufficient number of ways to select a candidate in the FL-13 race were tested, GAO proposes that a test be conducted to verify all 112 ways that GAO identified to select a candidate. Third, because no prior tests were identified that address the effect of a miscalibrated iVotronic DRE on the undervote, GAO proposes that an iVotronic DRE be deliberately miscalibrated to verify the accurate recording of ballots under these conditions. GAO expects these three tests would take 2 weeks, once the necessary arrangements are made.

Should the task force ask GAO to conduct the proposed tests, several matters would need to be addressed before testing could begin, including obtaining access to the iVotronic DREs that have been subject to a sequestration order, arranging for a test site, obtaining some commercially available test tools, developing test protocols and detailed test procedures, and arranging for the video recording of the tests. Sarasota County election officials have indicated that they can help GAO access the machines and provide a test site between November 26 and December 7, 2007.

Although the proposed tests could help provide increased assurance, they would not provide absolute assurance that the iVotronic DREs did not cause the large undervote in Sarasota County. The successful conduct of the proposed tests could reduce the possibility that the voting systems caused the undervote and shift attention to the possibilities that the undervote was the result of intentional actions by voters or voters that did not properly cast their votes on the voting system.

Mr. Chairman and Members of the Task Force:

I am pleased to appear before the task force today to present the findings on our review of voting equipment used in Florida's 13th Congressional District (Florida-13), which we are conducting in response to your request of May 25, 2007.

In November 2006, about 18,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District.¹ Following the contesting of the election results in the House of Representatives, the task force met and unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. On June 14, 2007, we met with the task force and agreed upon an engagement plan, which included the following review objectives:

(1) What voting systems and equipment were used in Sarasota County and what processes governed their use? (2) What was the scope of the undervote in Sarasota County in the general election? (3) To what extent were tests conducted on the voting systems in Sarasota County prior to the general election and what were the results of those tests? (4) Considering the tests that were conducted on the voting systems from Sarasota County after the general election, are additional tests needed to determine whether the voting systems contributed to the undervote?

To conduct our work, we met with officials from the Sarasota County Supervisor of Elections, the Florida Department of State and Division of Elections, and Election Systems and Software (ES&S), the manufacturer of the voting systems used in Sarasota County. We reviewed voting system documentation, including standards documents, audit and testing documentation, submissions from the contestant and contestee, and selected Florida election laws and rules. In Sarasota County, election officials demonstrated how the ES&S voting system was used to support the 2006 general election. To determine the scope of the undervote in Sarasota County, we collected election data from the Supervisor of Elections and analyzed it to determine whether the undervote could be attributed to particular voting machines or machine characteristics. Specifically, we examined ballot image logs and event logs from the voting systems and technician and incident reports generated by elections staff

¹Undervotes occur when the number of choices selected by the voter is fewer than the maximum allowed for that contest. In this case, it means ballots that did not record a selection for either candidate in the congressional contest.

from Sarasota County on election day. We also conducted various statistical analyses to characterize the undervote and to identify whether a subset of machines or precincts may have caused the large undervote.

We reviewed test documentation and interviewed officials involved with testing from ES&S, the Florida Division of Elections, and the Sarasota County Supervisor of Elections. To determine the need for additional tests, we also reviewed the tests conducted following the election, including those conducted or sponsored by the Florida Division of Elections, including the parallel testing, the examination of Sarasota County's election procedures and practices, and the source code review conducted at Florida State University's Security and Assurance in Information Technology (SAIT) laboratory. We reviewed the final reports of these tests and also met with the leader of the source code review team. Following the agreement to and execution of a non-disclosure agreement with the Florida Department of State and ES&S, we obtained access to the iVotronic source code and reviewed it to further our understanding of the system and to verify some of the source code review's findings. We analyzed the available information and identified a key set of voting system objectives that, if implemented properly, would provide reasonable assurance that the voting systems did not malfunction and cause the large undervote in Sarasota County. Using these objectives, we used the results of testing previously conducted and assessed the extent to which these key voting system objectives could be met. For those objectives that could not be adequately assured, we assessed the significance of those objectives and identified tests that could be conducted to help try to assure those key voting system objectives were met. For each test, we identified resources that would be required, including time and manpower.

We provided a draft of this report to the Florida Department of State, ES&S, and the Sarasota County Supervisor of Elections for their review and comments. The Florida Department of State and ES&S also conducted a sensitivity review to ensure that business proprietary information is not disclosed in this statement.

We conducted our work from June to September 2007 in Washington, D.C.; Tallahassee and Sarasota, Florida; and Omaha, Nebraska.

Results in Brief

In the 2006 general election, Sarasota County used voting systems manufactured by ES&S, specifically iVotronic direct recording electronic (DRE) voting systems during early and election day voting and the Unity

election management system, which handles the election administration functions, such as ballot design and election reporting.

Our independent analysis of the 2006 general election data from Sarasota County confirmed the large undervote in the race for Florida's 13th Congressional District, but did not identify any particular voting machines or machine characteristics that could have caused the large undervote in the election. The undervotes in Sarasota County for the congressional race were generally distributed across all machines and precincts.

We found that some of the prior tests and reviews provide assurance that the voting systems in Sarasota County functioned correctly, but they are not enough to provide reasonable assurance that the iVotronic DRE voting systems did not contribute to the undervote. For example, prior reviews provide reasonable assurance that the Unity election management system did not contribute to the undervote, and the votes captured by iVotronic DREs at the precincts match the voter count from precinct records within acceptable margins of error.

Portions of the Florida state audit, such as the firmware comparison and parallel tests, provided useful information, but the results could not be applied to all the iVotronic DREs used in the election because the number of machines tested was too small. Additionally, the machines were not tested for all different ways a voter can select a candidate in the congressional race. We also did not find any prior testing that would help us understand the effects of a miscalibrated touch screen. To address these issues, we propose that (1) a firmware verification test, (2) a ballot test, and (3) a calibration test be conducted to try to obtain further assurance that the iVotronic DREs used in Sarasota County during the 2006 general election did not cause the undervote. The firmware verification test would compare the firmware in a representative sample of iVotronic DREs with the certified version of firmware. The ballot test would exercise 112 ways to select a candidate on 10 iVotronic DREs. The calibration test would deliberately miscalibrate an iVotronic DRE that uses the certified software and verify the functioning of the machine. We expect the testing would take 2 weeks using a staff of about 6 to 8 people, once the necessary arrangements have been made. Although the proposed tests would provide increased assurance, they would not conclusively eliminate the machines as a cause of the undervote.

Before commencing the testing, we would need to obtain access to the iVotronic DREs that have been subject to a sequestration order in the state court system of Florida, arrange for a test site, obtain some commercially

available software and hardware for the firmware comparison test, develop test protocols and detailed test procedures, and arrange for video recording of the test. Sarasota County election officials have indicated that working around the county's election schedules, they could help us access the machines and provide a test site between November 26 and December 7, 2007.

Our proposed tests could help reduce the possibility that the undervote was caused by the iVotronic DREs. However, even after completing the tests, we would not have absolute assurance that the iVotronic DREs did not play any role in the large undervote. Absolute assurance is impossible to achieve because we are unable to recreate the conditions of the election in which the undervote occurred. By successfully conducting the proposed tests, we could reduce the possibility that the iVotronic DREs were the cause of the undervote and shift attention to the possibilities that the undervote was the result of intentional actions by the voter or voters that did not properly cast their votes on the voting system.

Draft copies of this statement were provided to the Secretary of State of Florida, the Supervisor of Elections of Sarasota County, and ES&S for their review and comment. The Florida Department of State provided technical comments, which we incorporated. The Sarasota County Supervisor of Elections did not provide us comments.

In its comments, ES&S stated that it believes that the collective results of prior testing have demonstrated that the voting systems worked properly in Florida's 13th Congressional District race, and that the focus should be on testing the effect of the ballot display on the undervote. We disagree that the prior test results adequately demonstrate that the voting systems could not have contributed to the undervote. Our analysis identified three areas where further testing could provide increased assurance that the undervote was not caused by the voting systems. We agree with ES&S that the large undervote in Florida's 13th Congressional District race could have been caused by voters who intentionally undervoted or voters who did not properly cast their ballots, potentially because of issues related to the human interaction with the ballot. However, our review focused on whether the voting systems could have contributed to the large undervote. ES&S also provided technical comments, which we incorporated as appropriate.

Background

The 13th Congressional District of Florida comprises DeSoto, Hardee, Sarasota, and parts of Charlotte and Manatee Counties. In the November 2006 general election, there were two candidates in the race to represent the 13th Congressional District: Vern Buchanan, the Republican candidate, and Christine Jennings, the Democratic candidate. The State of Florida certified Vern Buchanan the winner of the election. The margin of victory was 369 votes out of a total of 238,249 votes counted. Table 1 summarizes the results of the election and shows that the results from Sarasota County exhibited a significantly higher undervote rate than in the other counties in the congressional district.

Table 1: Results from 2006 General Election for Florida Congressional District 13

County	Buchanan	Jennings	Undervotes	Total ballots cast	Percentage undervote
Charlotte	4,460	4,277	225	8,962	2.51
DeSoto	3,471	3,058	142	6,672	2.13
Hardee	2,629	1,686	269	4,584	5.87
Manatee	50,117	44,432	2,274	96,828	2.35
Sarasota	58,632	65,487	18,412	142,532	12.92
Total	119,309	118,940	21,322	259,578	

Source: GAO analysis of Florida Division of Elections, Charlotte County, DeSoto County, Hardee County, Manatee County, and Sarasota County data.

Note: Numbers do not add up because of overvotes – where voters select more than the maximum number of candidates allowed in a race; in this case, a ballot that had votes for both Buchanan and Jennings.

In Florida, the Division of Elections in the Secretary of State's office helps the Secretary carry out his or her responsibilities as the chief election officer. The Division of Elections is responsible for establishing rules governing the use of voting systems in Florida. Voting systems cannot be used in any county in Florida until the Florida Division of Elections has issued a certification of the voting system's compliance with the Florida Voting System Standards.² The Florida Voting Systems Certification program is administered by the Bureau of Voting Systems Certification in the Division of Elections.

²Florida Department of State, *Florida Voting System Standards*, Form DS-DE 101 (Jan. 12, 2005).

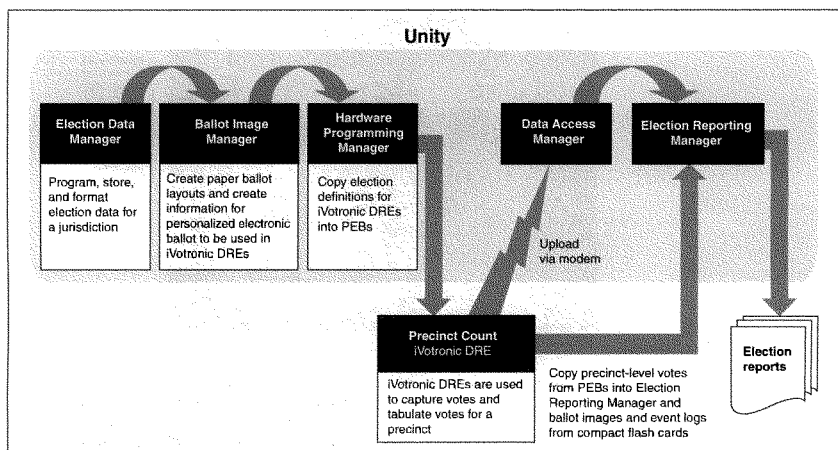
An elected supervisor of elections is responsible for implementing elections in each county in Florida in accordance with Florida election laws and rules. The supervisor of elections is responsible for the purchase and maintenance of the voting systems as well the preparation and use of the voting systems to conduct each election.

Sarasota County Used ES&S Voting Systems in 2006 General Elections

In the 2006 general election, Sarasota County used voting systems manufactured by ES&S. The State of Florida has certified different versions of ES&S voting systems. The version used in Sarasota County was designated ES&S Voting System Release 4.5, Version 2, Revision 2, and consisted of iVotronic DREs, a Model 650 central count optical scan tabulator for absentee ballots, and the Unity election management system. It was certified by the State of Florida on July 17, 2006. The certified system includes different configurations and optional elements, several of which were not used in Sarasota County.

The election management part of the voting system is called Unity; the version that was used was 2.4.4.2. Figure 1 shows the overall election operation using the Unity election management system and the iVotronic DRE.

Figure 1: Overview of Election Operation Using the Unity Election Management System and iVotronic DRE

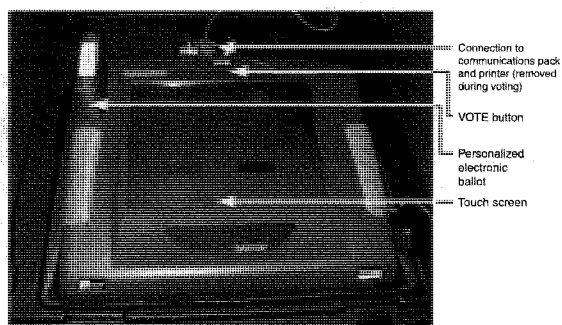


Source: GAO.

Sarasota County used iVotronic DREs for early and election day voting. Specifically, Sarasota County used the 12-inch iVotronic DRE, hardware version 1.1 with firmware version 8.0.1.2.³ Some of the iVotronic DREs are configured with Americans with Disabilities Act (ADA) functionality, which includes the use of audio ballots. The iVotronic DRE uses a touch screen—a pressure-sensitive graphics display panel—to display and record votes (see fig. 2).

³The certified version of ES&S Voting System Release 4.5, Version 2, Revision 2, specifies the use of iVotronic hardware version 1.0. According to Florida Division of Election officials, hardware version 1.1 of the iVotronic DRE has been available since at least 2004 and should have been included as a part of the certification for ES&S Voting System Release 4.5, Version 2, Revision 2. According to ES&S officials, iVotronic firmware version 8.0.1.2 runs in exactly the same manner on hardware versions 1.0 and 1.1.

Figure 2: The iVotronic DRE Voting System and Its Components.



Source: GAO.

The machine has a storage case that also serves as the voting booth. The operation of the iVotronic DRE requires using a personalized electronic ballot (PEB), which is a storage device with an infrared window used for transmission of ballot data to and from the iVotronic DRE. The iVotronic DRE has four independent flash memory modules, one of which contains the program code—firmware—that runs the machine and the remaining three flash memory modules store redundant copies of ballot definitions, machine configuration information, ballots cast by voters, and event logs. The iVotronic DRE includes a VOTE button that the voter has to press to cast a ballot and record the information in the flash memory. The iVotronic DRE also includes a compact flash card that can be used to load sound files onto iVotronic DREs with ADA functionality. The iVotronic DRE's firmware can be updated through the compact flash card. Additionally, at the end of polling, the ballots and audit information are to be copied from the internal flash memory module to the compact flash card.

To use the iVotronic DRE for voting, a poll worker activates the iVotronic DRE by inserting a PEB into the PEB slot after the voter has signed in at the polling place. After the poll worker makes selections so that the appropriate ballot will appear, the PEB is removed and the voter is ready to begin using the system. The ballot is presented to the voter in a series of

display screens, with candidate information on the left side of the screen and selection boxes on the right side (see fig. 3).

Figure 3: Second Ballot Page Showing the Congressional and Gubernatorial Races in Sarasota County's 2006 General Election

U.S. REPRESENTATIVE IN CONGRESS 13TH CONGRESSIONAL DISTRICT (Vote for One)		
Vern Buchanan	REP	<input type="checkbox"/>
Christine Jennings	DEM	<input type="checkbox"/>

STATE GOVERNOR AND LIEUTENANT GOVERNOR (Vote for One)		
Charlie Crist	REP	<input type="checkbox"/>
Jeff Kotkamp		
Jim Davis	DEM	<input type="checkbox"/>
Darryl L. Jones	DEM	<input type="checkbox"/>
Max Linn	REP	<input type="checkbox"/>
Tom Macklin		
Richard Paul Dembinsky	WPA	<input type="checkbox"/>
Dr. Joe Smith		
John Wayne Smith	WPA	<input type="checkbox"/>
James J. Kearney	WPA	<input type="checkbox"/>
Karl C.C. Behm	WPA	<input type="checkbox"/>
Carol Castagnero		
Write-In		<input type="checkbox"/>

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Source: Sarasota County Supervisor of Elections.

The voter can make a selection by touching anywhere on the line, and the iVotronic DRE responds by highlighting the entire line and displaying an X in the box next to the candidate's name. The voter can also change his or her selection by touching the line corresponding to another candidate or by deselecting his or her choice. "Previous Page" and "Next Page" buttons are used to navigate the multipage ballot. After completing all selections, the voter is presented with a summary screen with all of his or her selections (see fig. 4). From the summary screen, the voter can change any selection by selecting the race. The race will be displayed to the voter on its own ballot page. When the voter is satisfied with the selections and has reached the final summary screen, the red VOTE button is illuminated, indicating the voter can now cast his or her ballot. When the VOTE button is pressed, the voting session is complete and the ballot is recorded on the iVotronic DRE. In Sarasota County's 2006 general election, there were nine different ballot styles with between 28 and 40 races, which required

between 15 and 21 electronic ballot pages to display, and 3 to 4 summary pages for review purposes.

Figure 4: First Summary Page in Sarasota County's 2006 General Election

Instructions	
Return to any contest by touching the contest title. To cast your ballot now, press the Vote button.	
UNITED STATES SENATOR..... No Selection Made	STATE REPRESENTATIVE..... No Selection Made
U.S. REPRESENTATIVE IN CONGR..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
GOVERNOR AND LIEUTENANT GOV..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
ATTORNEY GENERAL..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
CHIEF FINANCIAL OFFICER..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
COMMISSIONER OF AGRICULTURE..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
Previous Page	Summary Ballot Page 1 of 3

Source: Sarasota County Supervisor of Elections.

Analysis of Election Data Shows that Undervote Was Distributed across All Machines and Precincts

Our analysis of the 2006 general election data from Sarasota County does not identify any particular voting machines or machine characteristics that could have caused the large undervote in Florida's 13th Congressional District race. The undervotes in Sarasota County for the congressional race were generally distributed across all machines and precincts. Using voting system data that we obtained from Sarasota County, we found that 1,499 iVotronic DREs recorded votes in the 2006 general election; 84 iVotronic DREs recorded votes during early voting, and 1,415 iVotronic DREs recorded votes on election day.⁴ Using these data, we verified that the vote counts for the contestant, contestee, and undervotes match the reported vote totals for Sarasota County in Florida's 13th Congressional District race. As can be seen in table 2, the undervote rate in early voting was significantly higher than in election day voting.⁵

Table 2: Undervotes in Florida's 13th Congressional District Race during Early and Election Day Voting

	All voters	Early voters	Election day voters
Machines	1,499	84	1,415
Ballots cast	119,919	30,877	89,042
Undervotes	17,846	5,445	12,401
Undervote rate	14.88%	17.63%	13.93%

Source: GAO analysis of Sarasota County data.

The range of the undervote rate for all machines was between 0 and 49 percent, with an average undervote rate of 14.3 percent. When just the early voting machines are considered, the undervote rate ranged between 5 and 28 percent. The largest number of undervotes cast on any one machine on election day was 39. While the range of ballots cast on any one machine on election day was between 1 and 121, the median number of

⁴Election day voting is the casting of ballots on election day at polling places. Absentee and early voting are programs that permit eligible persons to vote prior to election day. Absentee voting is conducted by mail in advance of election day and early voting is generally in-person voting in advance of election day at specific polling locations.

⁵Early and election day ballots include provisional ballots cast during those respective stages of voting and included in the vote totals. 160 provisional ballots were included in the vote totals. 37 provisional ballots were excluded.

Because the absentee ballots were not cast using iVotronic voting systems, we did not verify the absentee ballot counts. When absentee ballots are included, a total of 142,532 ballots were cast and a total of 18,412 undervotes were recorded.

ballots cast on any one machine was 66. The range of undervote rate by precinct was between 0 and 41 percent, and the average undervote by precinct was about 14.8 percent.

Prior Tests and Reviews Provide Some Assurance, but Do Not Provide Reasonable Assurance That the iVotronic DREs Did Not Contribute to the Undervote

Prior to the elections, Sarasota County's voting systems were subjected to several different tests that included testing by the manufacturer, certification testing by the Florida Division of Elections, testing by independent testing authorities, and logic and accuracy testing by Sarasota County's Supervisor of Elections. After the 2006 general election, an audit of Sarasota County's election was conducted by the State of Florida that included a review of the iVotronic source code, parallel tests, and an examination of Sarasota County's election procedures. Although these tests and reviews provide some assurance, as do certain controls that were in place during the election, that the voting systems in Sarasota County functioned correctly, they do not provide reasonable assurance that the iVotronic DREs did not contribute to the undervote.

Prior Tests and Reviews of Sarasota County's Voting Systems Provide Useful Information, but Have Some Shortcomings

According to ES&S officials, ES&S tested the version of the iVotronic DRE that was used in Sarasota County in 2001-2002, but they could not provide us documentation for those tests because the documentation had not been retained.

The Florida Division of Elections conducted certification testing of the iVotronic DRE and the Unity election management system before Sarasota County acquired the system from the manufacturer. The certification process included tests of the election management system and the conduct of mock primary and general elections on the entire voting system. ES&S Voting System, Release 4.5, Version 2, Revision 2, was certified by the Florida Division of Elections on July 17, 2006. According to Florida Division of Elections officials, testing of each version focuses on the new components, and components that were included in prior versions are not as vigorously tested. The 8.0.1.2 version of the iVotronic firmware was first tested as a part of ES&S Release 4.5, Version 1, which was certified in 2005. Version 2 introduced version 2.4.4.2 of the Unity Election Management System, which was certified in August 2005. Certification testing was conducted on software that was received from an independent test authority, who witnessed the building of the firmware from the source code. An independent test authority also conducted environmental testing

of the iVotronic DRE in 2001 that was relied upon by the Florida Division of Elections for certification.

A logic and accuracy test was conducted by Sarasota County on October 20, 2006, on 32 iVotronic DREs, and it successfully verified that all ballot positions on all nine ballot styles could be properly recorded. In addition, the use of a provisional ballot and audio ballot were tested, as well as machines configured for early voting with all nine ballot styles.

After the 2006 general election, the Florida Division of Elections conducted an audit of Sarasota County's 2006 general election that included two parallel tests, an examination of the certified voting system and conduct of election by Sarasota County's elections office, and an independent review of the iVotronic DRE firmware's source code. After the conduct of this audit, the audit team concluded that there was no evidence that suggested the official election results were in error or that the voting systems contributed to the undervote in Sarasota County.⁸ The parallel tests were performed using 10 iVotronic DREs—5 used in the 2006 general election and 5 that were not used. Four of the machines in each test replicated the votes cast on four election day iVotronic DREs. The fifth machine in each test used an ad hoc test script that involved picking a random vote pattern along with a specific vote selection pattern picked from 10 predetermined vote patterns for the 13th Congressional District for each ballot cast. The audit report asserts that testing a total of 10 machines is more than adequate to identify any machine problems or irregularities that could have contributed to undervotes in the Florida-13 race. However, we concluded that the results from the testing of 10 machines cannot be applied to all 1,499 iVotronic DREs used during the 2006 general election because the sample was not random and the sample size was too small.

In examining whether voting systems that were used in Sarasota County matched the systems that were certified by the Florida Division of Elections, the Florida audit team examined the Unity election management system and the firmware installed on six iVotronic DREs. The audit team confirmed that the software running on the Unity election management

⁸Florida Department of State, *Audit Report of the Election Systems and Software, Inc.'s, iVotronic Voting System in the 2006 General Election for Sarasota County, Florida* (Tallahassee, Florida: Feb. 2007), and Security and Assurance in Information Technology Laboratory, Florida State University, *Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware* (Tallahassee, Florida: Feb. 23, 2007).

system and the firmware in the six iVotronic DREs matched the certified versions held in escrow by the Florida Division of Elections. On the basis of its review, the audit team concluded that there is no evidence to indicate that the iVotronic DREs had been compromised or changed. We agree that the test verifies that those six machines were not changed, but any extrapolation beyond this cannot be statistically justified because the size of the sample is too small. Therefore, these tests cannot be used to obtain reasonable assurance that the 1,499 machines used in the general election used the certified firmware.

A software review and security analysis of the iVotronic firmware version 8.0.1.2 was conducted by a team led by Florida State University's SALT Laboratory. The eight experts in the software review team attempted to confirm or refute many different hypotheses that, if true, might explain the undervote in the race for the 13th Congressional District. In doing so, they made several observations about the code, which we were able to independently verify. The software review and our verification of the observations were helpful, but a key shortcoming was the lack of assurance whether the source code reviewed by the SALT team or by us, if compiled, would correspond to the iVotronic firmware that was used in Sarasota County for the 2006 election. According to ES&S and Florida Division of Elections officials, in May 2005 an independent testing authority witnessed the process of compiling the source code and building the version of firmware that was eventually certified by the Florida Division of Elections. According to ES&S officials, if necessary, ES&S can recreate the firmware from the source code, but the firmware would not be exactly identical to the firmware certified by the Florida Division of Elections because the embedded date and time stamp in the firmware would be different.

The software review team also looked for security vulnerabilities in software that could have been exploited to cause the undervote. Although the team found several software vulnerabilities, the team concluded that none of them were exploited in Sarasota in a way that would have contributed to the undervote. We did not independently verify the team's conclusion.

**Reasonable Assurance of
Some Voting System
Objectives Has Been
Achieved**

The Unity election management system and the iVotronic DREs are the major voting system components that may require testing to determine whether they contributed to the large undervote in Sarasota County. Our review of tests already conducted and documentation from the election provide us reasonable assurance that the key functions of the Unity

election management system—election definition and vote tabulation—did not contribute to the undervote. The election definitions created using the Unity election management system are tested during logic and accuracy testing to demonstrate that they include all races, candidates, and issues and that each of the items can be selected by a voter. The votes tabulated on the iVotronic DRE at each precinct matched the data uploaded to the Unity election management system, and the totals from the precinct results tapes agree with that obtained by Unity. Further, the state audit confirmed that the Unity election management system software running in Sarasota County matched the escrowed version certified by the Florida Division of Elections.

We have reasonable assurance that the number of ballots recorded by the iVotronic DREs is correct because this number is very close to the number of people recorded on the precinct registers as showing up at the polling places to vote either during early voting or on election day. This assurance also allows us to conclude that issues, such as votes cast by “fleeing voters”—votes that are cast by poll workers for voters who leave the polling place before pressing the button to cast the vote—and the potential loss of votes during a system shutdown, did not affect the undervote in this election. If these issues had occurred, they would have caused a discrepancy between the number of voters who sign in at the polling place to vote and the public counts recorded on the iVotronic DREs.

We have reasonable assurance that provisional ballots were appropriately handled by the iVotronic DREs and the Unity election management system. We also verified that during the Florida certification test process, the Division of Elections relied on successful environmental and shock testing conducted by an independent test authority.

**Reasonable Assurance
That All iVotronic DREs
Used in the 2006 General
Election Used Software
Certified by the Florida
Division of Elections Is
Lacking**

We found that prior testing and activities do not provide reasonable assurance that all iVotronic DREs used in Sarasota County on election day were using the hardware and firmware certified for use by the Florida Division of Elections. Sarasota County has records indicating that only certified versions were procured from ES&S, and the firmware version is checked in an election on the zero and results tapes. However, because there was no independent validation of the system versions, we cannot conclude that no modifications were made to the systems that would have likely made them inconsistent with the certified version. As we previously mentioned, the firmware comparison of only 6 iVotronic DREs in the state audit is insufficient to support generalization to all 1,499 iVotronic DREs that recorded votes during the election. Without reasonable assurance that

all iVotronic DREs are running the same certified firmware, it is difficult for us to rely on the results of other testing that has been conducted, such as the parallel tests or the logic and accuracy tests.

The Ability of Voters to Make Selections in Different Ways and Have Their Votes Properly Recorded Has Not Been Fully Tested

Prior testing of the iVotronic DREs only verified 13 of the 112 ways that we identified that a voter may use to select a candidate in Florida's 13th Congressional District race. Specifically, on an iVotronic DRE, a voter could (1) initially select either candidate or neither candidate (i.e. undervote), (2) change the vote on the initial screen, and (3) use a combination of page back and review screen options to change or verify his or her selection before casting the ballot. By taking into account these variations, our analysis has found at least 112 different ways a voter could make his or her selection in Florida's 13th Congressional District race, assuming that it was the only race on the ballot. Out of 112 different ways to select a candidate in the congressional race, Florida certification tests and the Sarasota County logic and accuracy tests verified 3 ways to select a candidate; and the Florida parallel tests verified 10 ways to select a candidate—meaning that of the 112 ways, 13 have been tested. By not verifying these different ways to select a candidate, we do not have reasonable assurance that the system will properly handle expected forms of voter behavior.

The Effect of Miscalibrated iVotronic DREs Is Unclear

During the setup of the iVotronic DRE, sometimes referred to as the clear and test process, the touch screens are calibrated by using a stylus to touch the screen at 20 different locations. The calibration process is designed to align the display screen with the touch screen input. It has been reported that a miscalibrated machine could affect the selection process by highlighting a candidate that is not aligned with what the voter selected. We identified two reported cases on election day where the miscalibration of the iVotronic DRE led to its closure and discontinued use for the rest of the day. While a miscalibrated machine could certainly make an iVotronic DRE harder to use, it is not clear it would have helped to contribute to the undervote. We did not identify any prior testing or activities that would help us understand the effect of a miscalibrated iVotronic DRE on the undervote.

Further Tests Could Provide Increased but Not Absolute Assurance That the iVotronic DREs Used in the Election Did Not Cause the Undervote

On the basis of our analysis of all prior test and audit activities, we propose that a firmware verification test, a ballot test, and a calibration test be conducted to try to obtain increased assurance that the iVotronic DREs used in Sarasota County during the 2006 general election did not cause the undervote.

We propose that the firmware verification testing be started first, once the necessary arrangements have been made, such as access to the needed machines and the development of test protocols and detailed test procedures. Once we have reasonable assurance that the iVotronic DREs are running the same certified firmware, we could conduct the ballot test and calibration test on a small number of machines to determine whether it is likely the machines accurately recorded and counted the ballots. If the firmware verification tests are successfully conducted, we would have much more confidence that the iVotronic DREs will behave similarly when tested. If there are differences in the firmware running on the iVotronic DREs, we would need to reassess the number of machines that need to be tested for ballot testing and calibration testing in order for us to have confidence that the test results would be true for all 1,499 iVotronic DREs used during the election. In other words, if we are reasonably confident that the same software is used in all 1,499 machines, then we are more confident that the results of the other tests on a small number of machines can be used to obtain increased assurance that the iVotronic DREs did not cause the undervote. Although the proposed tests would provide increased assurance, they would not conclusively eliminate the machines as a cause of the undervote.

Conduct Firmware Testing to Verify That the Firmware in the iVotronic DREs Used in Sarasota County Matches the Certified Version

We propose to conduct a firmware verification test using a statistical sampling approach that can provide reasonable assurance that all 1,499 iVotronic DREs are running the certified version of firmware. The exact number of machines that would be tested depends on the confidence level desired and how much error can be tolerated. We propose drawing a representative sample from all the iVotronic DREs that recorded votes in the general election. With a sample size of 115 iVotronic DREs, which would be divided between sequestered and nonsequestered machines, and assuming that there are no test failures, we would be able to conclude with a 99 percent confidence level that no more than 4 percent of the 1,499 iVotronic DREs used in the election were using uncertified firmware.

We suggest a test approach similar to what was used by the Florida Division of Elections when it verified the firmware for 6 iVotronic DREs.

We estimate that the firmware testing for 115 machines could be conducted in about 5 to 7 days and would require about 5 or 6 people, once the necessary arrangements have been made. The machines would be transported to a test facility specified by Sarasota County election officials where we could perform the test. The activities involved in conducting a firmware validation test would include locating and retrieving the selected iVotronic DRE from the storage facility, transporting it to the test facility, opening the DRE, extracting the chip with the firmware, reading the contents of the chip using a specialized chip reader, and conducting a comparison between the contents and the certified firmware to determine if any differences exist. To conduct this test, we would need commercially available specialized hardware and software similar to that used by the Florida Division of Elections in its firmware comparison test.

**Conduct Ballot Testing of
iVotronic DREs to Confirm
Correct Operation**

We propose conducting ballot testing on 10 iVotronic DREs, each configured with one of the nine different ballot styles, with the 10th machine configured as an early voting machine with all nine ballot styles. We would test 112 ways to select a candidate on the early voting machine. On the election day machines, we would test the 112 different ways distributed across the 9 machines in a random manner, meaning each machine would on average record 12-13 ballots. Assuming that (1) reasonable assurance is obtained that all iVotronic DREs used during the election were using the same certified firmware, and (2) we found no failures during the ballot testing, this testing would provide increased assurance that the iVotronic DREs used during the election, both in early voting and in election day voting, were able to accurately record and count ballots when using any of the 112 ways to select a candidate in the Florida-13 race.

We would plan to code each ballot by including an identifier in the write-in candidate field for either the U.S. senator or governor's race. Using this write-in coding, we could examine the ballot image and confirm that each ballot was accurately recorded and counted by the iVotronic DRE. Any encountered failures would also be more rapidly attributed to a specific test case, and we would be able to more readily repeat the test case to determine if we have a repeatable condition. Testing 112 ways to select a candidate on a single machine would also provide us some additional assurance that the volume of ballots cast on election day did not cause a problem. We note that casting 112 ballots on a single machine is more than that cast on over 99 percent of the 1,415 machines used on election day.

We estimate the ballot testing would take about 2 to 3 days and require the equivalent of 2 people, once the necessary arrangements have been made.

Deliberately Miscalibrate an iVotronic DRE to Understand the Effect on the Undervote

Because little is known about the effect of a miscalibrated machine on the behavior of an iVotronic DRE, we propose to deliberately miscalibrate an iVotronic DREs and verify the functioning of the machine. We propose to identify different ways to miscalibrate a ballot and to test ballots on the miscalibrated iVotronic DRE to verify that it still properly records votes. With this test we would confirm whether (1) the review screen displays the same selection in the Florida-13 race as was highlighted in the selection screen, and (2) that the vote is recorded as it was displayed on the review screen. Again, we would plan to use the write-in candidate option to verify the proper recording of the ballot. This test would demonstrate whether the system correctly records a vote for the race and hence whether it contributed to the undervote. We estimate that the calibration test could be completed in about 1 day by 2 people, once the necessary arrangements have been made.

Several Matters Remain to Be Addressed to Conduct Further Testing

Should the task force ask us to conduct the proposed testing, we want to make the task force aware of several other matters that would need to be addressed before we could begin testing. These activities would require some time and resources to complete before testing could commence.

First, we would need to gain access to iVotronic DREs that have been subject to a sequestration order in the state court system of Florida. If we do not have access to the needed machines, we would be unable to obtain reasonable assurance that the machines used on election day were using certified software, and without this assurance, the results from prior tests and any results of our ballot and calibration tests would be less meaningful because we would be unable to apply the results to all 1,499 iVotronic DREs used during the election. Second, we would need to agree upon an appropriate facility for the tests. Sarasota County Supervisor of Elections has indicated that we can use its warehouse space, but because of upcoming elections in November and January, the only time the election officials would be able to provide us this space and the necessary support is between November 26 and December 7, 2007. If testing cannot be completed during this time period, Sarasota County officials stated that they would not be able to assist us until February 2008. Third, some tests may require commercially available specialized software, hardware, or other tools to conduct the tests. We would need to make arrangements to either borrow or to purchase such testing tools before

commencing testing. Fourth, in order to conduct any tests, we would need to develop test protocols and detailed test procedures and steps. We also anticipate that we would need to conduct a dry run, or dress rehearsal, of our test procedures to ensure that our test tools function properly and that our time estimates are reasonable. Finally, we would need to make arrangements for video recording of our testing. It would be our preference to have a visual record of the tests to document the actual test conduct and to facilitate certain types of test analysis.

Other Observations on Touch Screen Voting Systems

We recognize that human interaction with the ballot layout could be a potential cause of the undervote. Although we have not explored this issue in our review, we note that there is an ongoing academic study that is exploring this issue using voting machines obtained from ES&S. We believe that such experiments could be useful and could provide insight into the ballot layout issue.

During our review, we noted that several suggestions have been offered as possible ways to establish that voters are intentionally undervoting and to provide some assurance that the voting systems did not cause the undervote. First, a voter-verified paper trail could provide an independent confirmation that the touch screen voting systems did not malfunction in recording and counting the votes from the election. The paper trail would reflect the voter's selections and, if necessary, could be used in the counting or recounting of votes. This issue is recognized in the Florida State University SALT source code review as well as the 2005 and draft 2007 Voluntary Voting Systems Guidelines prepared for the Election Assistance Commission. We have previously reported on the need to implement such a function properly.⁷ Second, explicit feedback to voters that a race has been undervoted and a prompt for voters to affirm their intent to undervote might help prevent many voters from unintentionally undervoting a race. On the iVotronic DREs, such feedback and prompts are provided only when the voter attempts to cast a completely blank ballot, but not when a voter undervotes in individual races. Third, offering a "none of the above" option in a race would provide voters with the opportunity to indicate that they are intentionally undervoting. The State of Nevada provides this option in certain races in its elections. Decisions

⁷GAO, *Elections: Federal Efforts to Improve Security and Reliability of Electronic Voting Systems Are Under Way, but Key Activities Need to Be Completed*, GAO-05-956 (Washington, D.C.: Sept. 21, 2005).

about these or other suggestions about ballot layout or voting system functions should be informed by human factors studies that assess their effectiveness in accurately recording voters' preferences, making voting systems easier to use, and preventing unintentional undervotes.

Conclusions

The high undervote encountered in Sarasota County in the 2006 election for Florida's 13th Congressional District has raised questions about whether the voting systems accurately recorded and counted the votes cast by eligible voters. Other possible reasons for the undervote could be that voters intentionally undervoted or voters did not properly cast their ballots on the voting systems, potentially because of issues relating to the interaction between voters and the ballot. The focus of our review has been to determine whether the voting systems—the iVotronic DREs, in particular—contributed to the undervote. We found that the prior reviews of Sarasota County's 2006 general election have provided valuable information about the voting systems. Our review found that in some cases we were able to rely on this information to eliminate areas of concern. This allowed us to identify the areas where increased assurances were needed to answer the questions being raised. Accordingly, the primary focus of the tests we are proposing is to obtain increased assurance that the results of the prior reviews and our proposed testing can be applied to all the iVotronic DREs used in the election. Our proposed tests involving the firmware comparison, ballot testing, and calibration testing could help reduce the possibility that the undervote was caused by the iVotronic DREs. However, even after completing the tests, we would not have absolute assurance that the iVotronic DREs did not play any role in the large undervote. Absolute assurance is impossible to achieve because we are unable to recreate the conditions of the election in which the undervote occurred. By successfully conducting the proposed tests, we could reduce the possibility that the iVotronic DREs were the cause of the undervote and shift attention to the possibilities that the undervote was the result of intentional actions by the voter or voters that did not properly cast their votes on the voting system.

Comments and Our Evaluation

We provided draft copies of this statement to the Secretary of State of Florida, the Supervisor of Elections of Sarasota County, and ES&S for review and comment. The Florida Department of State provided technical comments, which we incorporated. The Sarasota County Supervisor of Elections appreciated the opportunity to review the draft, but provided us no comments.

In its comments, ES&S stated that it believes that the collective results of testing already conducted on the Sarasota County voting systems have demonstrated that they performed properly and as they were designed to function and that all votes were accurately captured and counted as cast in Florida's 13th Congressional District race. Further, ES&S asserts that tests and analyses should be conducted to examine the effect of the ballot display on the undervote, which it believes is the most probable cause of the undervote.

We disagree that the collective results of testing already conducted on the Sarasota County voting systems adequately demonstrate that the voting systems could not have contributed to the undervote in the Florida-13 race. First, as we have cited, we do not have adequate assurance that all the iVotronic DREs used in Sarasota County used the firmware certified by the Florida Division of Elections. Without this assurance, it is difficult for us to apply the results from the other tests to all 1,499 machines that recorded votes during the election because we are uncertain that all machines would have behaved in a similar manner. Further, we believe that expected forms of voter behavior to select a candidate in the Florida-13 race were not thoroughly tested. While ES&S asserts that such processes would have no effect on the iVotronic DRE's ability to capture and record a voter's selection, we did not identify testing that verified this. Further, while ES&S states that the testing of a deliberately miscalibrated iVotronic DRE would result in a clearly visible indication of which candidate was selected, we could not identify any testing that demonstrated this.

We acknowledge that the large undervote in Florida's 13th Congressional District race could have been caused by voters who intentionally undervoted or voters who did not properly cast their ballots, potentially because of issues related to the human interaction with the ballot. However, the focus of our review, as agreed with the task force, was to review whether the voting systems could have contributed to the large undervote. ES&S also provided technical comments, which we incorporated as appropriate.

Mr. Chairman, this completes my prepared statement. I would be happy to respond to any questions you or other members of the task force may have at this time.

Contacts and Acknowledgments

For further information about this statement, please contact Keith Rhodes, Chief Technologist, at (202) 512-6412 or rhodesk@gao.gov, or Naba Barkakati at (202) 512-4499 or barkakatin@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Other key contributors to this statement include James Ashley, James Fields, Jason Fong, Cynthia Grant, Geoffrey Hamilton, Richard Hung, John C. Martin, Jan Montgomery, Jennifer Popovic, Sidney Schwartz, and Daniel Wexler.

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Roll Call

October 3, 2007 Wednesday

GAO Agrees to Test Florida Voting Machines

BYLINE: John McArdle, Roll Call Staff**LENGTH:** 635 words

A House task force voted Tuesday to allow the Government Accountability Office to move forward with a series of new tests, which, when complete, will allow the agency to say with "reasonable certainty" whether electronic voting machines failed last year in Florida's 13th district House race.

Nabajyoti Barkakati, a technology expert with the GAO who appeared Tuesday before the House Administration's special elections task force, said preliminary analysis of the data from Sarasota County so far has yielded no indication that any particular voting machine characteristic caused the large number of "undervotes" in the November 2006 race between Democrat Christine Jennings and now-Rep. Vern Buchanan (R). But he said further testing could provide an increased -- though not absolute -- assurance that the machines were not the problem.

Jennings, who the state certified lost by 369 votes, has alleged that the electronic voting machines contributed to more than 18,000 undervotes -- when ballots are cast but a choice for a particular candidate goes unrecorded either because of machine error, ballot design or other factors. Although the Sarasota-based district leans Republican in most elections, Jennings was thought to be leading the race heading into Election Day. The three-Member election task force was created this spring to review the contested election.

Barkakati said Tuesday that if machine error were to be ruled out, then ballot layout and user error would be the likely explanations for the large undervote.

The GAO's analysis of the case, which is moving into its fifth month, has found that some of the prior tests and reviews conducted by Florida and Sarasota County elections officials provide assurance that certain components of the voting systems functioned correctly. Barkakati said Tuesday that further testing in of a greater sampling of machines in three specific ways would allow the GAO to be 99 percent certain in the matter.

The task force gave the GAO permission Tuesday to test 115 machines that have been impounded from the race and to test each in all 112 identified ways that a voter could use the voting system. (Various selection options include users changing their selection mid-vote, using a combinations of "page back" and "review screen" options, among many others).

Sarasota County election officials have informed the GAO that they can help agency inspectors access the machines and provide a test site between Nov. 26 and Dec. 7.

The task force's chairman, Rep. Charlie Gonzalez (D-Texas), said Tuesday that the GAO "needs to take advantage of that window of opportunity and in no way wait

until 2008," as the task force is relying on the agency's findings as it reviews the circumstances of the Florida 13th district race.

Rep. Kevin McCarthy (Calif.), the lone Republican on the task force, said Tuesday that he supports the further testing and hopes that more certain findings will allow the task force to finish its review of the 2006 race before Congress gets too much further into the 2008 election cycle.

"The result of this investigation thus far seems to clearly point that there is no smoking gun," McCarthy said in his opening statement. "No evidence that the voting system would have caused the undervote, a conclusion similar to what Sarasota County, the state of Florida and independent teams of experts have already derived. ... I agree with the GAO's recommendations to move forward with those additional tests so that it can make its eventual recommendation with a 'reasonable certainty' and finally put to rest for the people of the 13th district of Florida the challenge against Congressman Vern Buchanan."

Jennings, who seems to have given up on challenging the election results in court, announced in July that she is seeking a rematch with Buchanan in 2008.

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Article published Feb 7, 2008

Machines cleared in 2006 vote flap GAO says touch-screens didn't cause undervote

By DOUG SWORD
doug.sword@heraldtribune.com

U.S. Rep. Vern Buchanan's campaign claimed a "huge victory" late Wednesday when it released a federal report that found Sarasota County's touch-screen voting machines were not the cause of 18,000 undervotes in the 2006 congressional election.

In a draft report provided by Buchanan's campaign, the U.S. Government Accountability Office said the touch-screen machines "did not contribute to the large undervote" in the 13th Congressional District election in which Republican Buchanan was declared the winner by 369 votes over Democrat Christine Jennings.

Jennings had contested the results based on the assertions of local voters that their votes for her did not register or were actually switched by the machines. After a recount, she challenged the election in state court and then before Congress.

Jennings' camp could not be reached for comment late Wednesday. Neither could the author of the GAO report, Nabajyoti Barkakati, who is the agency's acting chief technologist.

Barkakati is scheduled to present the findings of the GAO report Friday before a three-member congressional task force investigating the election.

"It's my understanding that the Jennings campaign has not seen a report and was waiting for the findings on Friday like the rest of us," said Kyra Jennings, a spokeswoman for the Democratic Congressional Campaign Committee. She is not related to Christine Jennings.

Kyra Jennings noted, though, that Christine Jennings' aim in contesting the election was to assure voters in Sarasota County that adequate testing of the machines was done and to restore their faith in the election.

"She said it was never about who won or lost," the DCCC spokeswoman said.

If the GAO report does bring the final chapter to Jennings' challenge, it comes at the halfway point of Buchanan's two-year term in the House of Representatives.

A rematch of the two candidates is expected in November. Buchanan says he has raised \$1.7 million for his re-election bid; Jennings has raised \$477,000. Their contest was the most expensive U.S. House race in 2006.

Hayden Dempsey, the attorney for Buchanan's campaign, called the findings of the report a "huge victory."

"Hopefully, this is the final culmination of a taxpayer-funded wild goose chase," Dempsey said. "This report confirms what we have known and what the people of the congressional district

have known ... that the machines worked."

If the contest is finally at rest, it joins the county's \$4.5 million touch-screen system, which was scrapped after voters approved a measure in November 2006 requiring a voting system that leaves a paper trail. Sarasota County switched to an optical scan voting system in the November 2007 election, although it uses a new state-approved touch-screen system for handicapped voters.



Report: Machines didn't cause undervote in District 13 election

Feb 6, 2008 8:31 PM (1 hr 10 mins ago) By MITCH STACY, AP

TAMPA, Fla. (Map, News) - Touch-screen voting machines likely performed properly and were not to blame for the large number of undervotes in the District 13 congressional election in 2006, federal investigators said in a draft report obtained by the Associated Press Wednesday.

The U.S. Government Accountability Office plans to present the report Friday to a House task force that has been investigating the District 13 congressional election. Republican Vern Buchanan beat Democrat Christine Jennings by 369 votes to win the southwest Florida seat 15 months ago.

At issue was whether malfunctioning ATM-style voting machines failed to record more than 18,000 votes in the congressional election, or whether a large number of voters - nearly 15 percent of the total - just skipped that particular race on their touch-screen ballots.

Jennings has asked Congress to throw out the election results, claiming that the Sarasota County voting machines failed to count the votes. Buchanan was declared the winner after two recounts and a state audit found no problems with the machines.

The GAO, the investigative arm of Congress, plans to tell task force members Friday that while they can't provide "absolute assurance" that the voting machines didn't contribute to the large number of undervotes, the GAO's testing "significantly reduced the possibility" that the machines were to blame. Voters themselves are more likely to blame, the report said.

"GAO acknowledges the possibility that the large undervote in Florida's 13th Congressional District race could have been caused by factors such as voters who intentionally undervoted or voters who did not properly cast their ballots on the (voting machines), potentially because of issues relating to interaction between voters and ballot," the report said.

"This is a huge victory for democracy and the people of the 13th District," said Hayden Dempsey, an attorney for Buchanan. "It tells losing candidates you cannot overturn an election simply because you don't like the outcome. ... It is significant to note that the GAO investigation was initiated at Jennings' request by a Democrat-controlled Congress, yet it reached the same conclusion as every other study over the past 15 months - the voting machines worked."

Jennings, who never conceded the 2006 race, is challenging Buchanan for the seat again this year. A Jennings campaign representative didn't immediately return a call seeking comment Wednesday.

In part because of the District 13 dispute, Florida Gov. Charlie Crist pushed the Legislature to pass a bill that largely replaced touch-screen voting machines in the state with optical-scan machines that leave a paper trail.

Florida Democrats had asked the House committee to begin reviewing the election after reports that Sarasota County elections officials were told of an anomaly in the touch-screen voting machines.

In the August 2006 memo, Elections Systems & Software informed state and local election officials its Ivotronic machines were exhibiting slow response times in highlighting candidates' names after voters made their selections.

But ES&S has contended that its machines were not to blame for the unusually high number of non-votes in Sarasota County. An ES&S spokeswoman didn't immediately return a call Wednesday night.

A team of university computer experts who examined the machines after the election suggested the problem was voter confusion over a poorly designed ballot, which had drawn complaints from voters. The District 13 race was listed at the top of the second page of the ballot without the same type of header that preceded other races on the ballot.

GAO

United States Government Accountability Office**Statement****Before the Task Force for the Contested
Election in the 13th Congressional District
of Florida, Committee on House
Administration, House of Representatives**

For Release on Delivery
Expected at 10:00 a.m. EST
Friday, February 8, 2008

ELECTIONS**Results of GAO's Testing of
Voting Systems Used in
Sarasota County in Florida's
13th Congressional District**

Statement of Nabajyoti Barkakati, Ph.D
Acting Chief Technologist
Applied Research and Methods



GAO-08-425T

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GAO Highlights

Highlights of GAO-08-425T, a statement before the Task Force for the Contested Election in the 13th Congressional District of Florida, Committee on House Administration, House of Representatives

Why GAO Did This Study

In November 2006, about 18,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District (Florida-13). After the election results were contested in the House of Representatives, the task force unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. In October 2007, GAO presented its findings on the review of the voting systems and concluded that while prior tests and reviews provided some assurance that the voting systems performed correctly, they were not enough to provide reasonable assurance that the voting systems in Sarasota County did not contribute to the undervote. GAO proposed that a firmware verification test, a ballot test, and a calibration test be conducted. The task force requested that GAO proceed with the proposed additional tests. GAO also verified whether source code escrowed by Florida could be rebuilt into the firmware used in Sarasota County.

To conduct its work, GAO conducted tests on a sample of voting systems used in Sarasota County during the 2006 general election. GAO witnessed the rebuild of the firmware from the escrowed source code at the manufacturer's development facility. GAO reviewed test documentation from Florida, Sarasota County, and the voting system manufacturer and met with election officials to prepare the test protocols and detailed test procedures.

To view the full product, including the scope and methodology, click on GAO-08-425T. For more information, contact Nabayoti Barkakati at (202) 512-6412 or barkakatin@gao.gov.

ELECTIONS

Results of GAO's Testing of Voting Systems Used in Sarasota County in Florida's 13th Congressional District

What GAO Found

GAO conducted three tests on the iVotronic Direct Recording Electronic (DRE) voting systems in Sarasota County and these tests did not identify any problems. Based on its testing, GAO obtained increased assurance that the iVotronic DREs used in Sarasota County during the 2006 general election did not contribute to the large undervote in the Florida-13 contest. Although the test results cannot be used to provide absolute assurance, GAO believes that these test results, combined with the other reviews that have been conducted by the State of Florida, GAO, and others, have significantly reduced the possibility that the iVotronic DREs were the cause of the undervote.

GAO's firmware verification test showed that the firmware installed in a statistically selected sample of 115 machines used by Sarasota County during the 2006 general election matched the firmware certified by the Florida Division of Elections. The statistical approach used in selecting these machines lets GAO estimate with a 99 percent confidence level that no more than 60 of the 1,499 iVotronic DREs that recorded votes in the 2006 general election were using different firmware. Consequently, GAO is able to place more confidence in the results of other tests conducted on a small number of machines by GAO and by others, which indicated that the iVotronic DREs did not cause the undervote. GAO also confirmed that when the manufacturer rebuilt the iVotronic DRE firmware from the source code that was held in escrow by the Florida Division of Elections and previously reviewed by GAO and others, the resulting firmware matched the version certified by the Florida Division of Elections.

For the ballot test, GAO cast predefined test ballots on 10 iVotronic DREs and confirmed that each ballot was displayed and recorded accurately. GAO conducted the calibration test by miscalibrating two iVotronic DREs and casting ballots on them to validate that the machines recorded the information that was displayed on the touch screen. Based on the results of the ballot and calibration tests, GAO found that (1) the machines properly displayed, recorded, and counted the selections for all test ballots cast during ballot testing involving 112 common ways a voter may have interacted with the system, and (2) the deliberately miscalibrated machines, though difficult to use, accurately recorded the ballot selections as displayed on screen.

At this point, GAO believes that adequate testing has been performed on the voting machine software and does not recommend further testing in this area. Given the complex interaction of people, processes, and technology that must work effectively together to achieve a successful election, GAO acknowledges the possibility that the large undervote in Florida's 13th Congressional District race could have been caused by factors such as voters who intentionally undervoted, or voters who did not properly cast their ballots on the iVotronic DRE, potentially because of issues relating to interaction between voters and the ballot.

Mr. Chairman and Members of the Task Force:

I am pleased to appear before the task force today to present the findings on our testing of the voting equipment used in the 2006 general election in Florida's 13th Congressional District (Florida-13). I would like to thank the task force for its overall support of our efforts and specifically for the assistance provided in obtaining resources from the House Recording Studio that were critical to successfully completing our testing efforts.

In November 2006, about 18,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District.¹ After the election results were contested in the House of Representatives, the task force met and unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. In our October 2, 2007, statement for the task force, we presented the findings of our review of the voting systems and stated that while prior tests and reviews provided some level of assurance that the voting systems in Sarasota County—iVotronic direct recording electronic (DRE) voting systems manufactured by Election Systems and Software (ES&S)—functioned correctly, they were not enough to provide reasonable assurance that the iVotronic DRE voting systems did not contribute to the undervote.² Specifically, we found that assurance was lacking in three areas and proposed to the task force that additional tests—firmware verification, ballot, and calibration—be conducted to address these areas. We stated that successful accomplishment of these tests would provide increased, but not absolute, assurance that the iVotronic DREs used in Sarasota County during the 2006 general election did not cause the undervote. The task force requested that we proceed with the proposed additional tests. Our objectives were to (1) verify that firmware installed in a statistical sample of iVotronic DREs was identical to the firmware certified by the State of Florida, (2) perform ballot testing using 112 ways to cast a ballot for the Florida-13 contest to ensure that the voting machines would properly record and count the ballots, and (3) deliberately miscalibrate voting machines and then cast ballots on those

¹ Undervotes occur when the number of choices selected by the voter is fewer than the maximum allowed for that contest. In this case, it means ballots that did not record a selection for either candidate in the congressional contest.

² GAO, *Elections: Further Testing Could Provide Increased but Not Absolute Assurance That Voting Systems Did Not Cause Undervotes in Florida's 13th Congressional District*, GAO-08-97T (Washington, D.C.: Oct. 2, 2007).

machines to ensure that the voting machines would properly record the ballots. As part of the first objective, we also validated that the source code, which was held in escrow by the Florida Division of Elections, would produce the firmware used by Sarasota County during the 2006 general election.

To conduct our tests, we developed test protocols and detailed test procedures. We met with officials from the Sarasota County Supervisor of Elections, the Florida Department of State and Division of Elections, and ES&S to obtain the necessary details about the voting systems and prior tests to document our test procedures. We also reviewed voting system documentation to develop a testing approach and the test procedures. To ensure that the certified firmware held in escrow by the Florida Division of Elections corresponded to the source code that was reviewed by a team from Florida State University and us, on November 19, 2007, we visited ES&S's development facility in Rockford, Illinois, and witnessed the rebuild of the firmware from the escrowed source code.

Further details on our test methodology are included in the following sections on each of the three tests. Appendix I outlines the process used to select machines for testing, and appendix II lists the iVotronic DREs that we tested. We coordinated with the Florida Division of Elections and the Sarasota County Supervisor of Elections to obtain access to the iVotronic DREs and other necessary test equipment to conduct our testing. We conducted the firmware verification, ballot, and calibration tests at the Sarasota County Voting Equipment Facility (VEF) in Sarasota, Florida. We established the test environment on November 26, 2007, and conducted the tests from November 27, 2007, to December 4, 2007. During this time, we completed the steps necessary to conduct the tests and collected the test data. In addition, we video recorded the tests. One camera was used to capture a wide angle shot of the test room. Other cameras recorded the conduct of the firmware verification, ballot, and calibration tests.

We provided a draft of this statement to the Florida Department of State and ES&S for their review and comments. We briefed the Sarasota County Supervisor of Elections on the contents of our statement. The Florida Department of State and ES&S also conducted a sensitivity review to ensure that business proprietary information is not disclosed in this statement. We conducted our work from October 2007 to February 2008 in Washington, D.C.; Tallahassee and Sarasota, Florida; and at ES&S facilities in Rockford, Illinois, and Omaha, Nebraska.

Results in Brief

We conducted three tests on the iVotronic DRE voting systems used in Sarasota County and these tests did not identify any problems that would indicate that the machines were responsible for the undervote in the Florida-13 race in the 2006 general election. In our firmware verification test, we extracted the firmware from a random probability sample of 115 iVotronic DREs out of the 1,499 iVotronic DREs used in Sarasota County's 2006 general election and found that each machine's firmware matched the certified version of firmware held in escrow by the Florida Division of Elections. The statistical approach used in selecting these machines enables us to estimate with a 99 percent confidence level that at least 1,439 of the 1,499 machines used the same firmware that was certified by the Florida Division of Elections. Consequently, we have more confidence in the results of other tests conducted on a small number of machines by GAO and by others, which indicated that the iVotronic DREs were not the cause of the undervote. We witnessed the rebuild of the iVotronic DRE's firmware from the source code that was held in escrow by the Florida Division of Elections and that was previously reviewed by Florida State University and by us. At ES&S's software development facility, we observed that rebuilding the firmware from the escrowed source code resulted in the same firmware that was certified and held in escrow by the Florida Division of Elections. This validation provides greater confidence in the results of prior source code reviews by Florida State University and us.

For the ballot test, we cast predefined test ballots on 10 iVotronic DREs and confirmed that each ballot was displayed and recorded accurately. The test ballots represented 112 common ways a voter may have interacted with the iVotronic DRE to select a candidate in the Florida-13 race and cast a ballot. These tests were performed on nine machines configured as election day machines and then repeated on one machine configured as an early voting machine.

Finally, we conducted the calibration test by miscalibrating two iVotronic DREs and casting ballots on them to validate that the machines recorded the information that was displayed on the touch screen. Our tests, involving a total of 10 different miscalibration patterns and capturing 39 ballots, found that the machines correctly displayed the selection in the Florida-13 race on the review screen and correctly recorded the ballot. Although the machines were more difficult to use, the selections shown on the screen were the same selections captured by the machine when the ballot was cast.

Based on the results of these tests, we have obtained increased assurance, but not absolute assurance that the iVotronic DREs used in Sarasota County's 2006 general election did not contribute to the large undervote in the Florida-13 contest. Absolute assurance is impossible to achieve because we are unable to recreate the conditions of the election in which the undervote occurred. Although the test results cannot be used to provide absolute assurance, we believe that these test results, combined with the other reviews that have been conducted by the State of Florida, GAO, and others, have significantly reduced the possibility that the iVotronic DREs were the cause of the undervote. At this point, we believe that adequate testing has been performed on the voting machine software to reach this conclusion and do not recommend further testing in this area. Given the complex interaction of people, processes, and technology that must work effectively together to achieve a successful election, we acknowledge the possibility that the large undervote in Florida's 13th Congressional District race could have been caused by factors such as voters who intentionally undervoted, or voters who did not properly cast their ballots on the iVotronic DRE, potentially because of issues relating to interaction between voters and the ballot.

Background

The 13th Congressional District of Florida comprises DeSoto, Hardee, Sarasota, and parts of Charlotte and Manatee Counties. In the November 2006 general election, there were two candidates in the race to represent the 13th Congressional District: Vern Buchanan, the Republican candidate, and Christine Jennings, the Democratic candidate. The State of Florida certified Vern Buchanan the winner of the election. The margin of victory was 369 votes out of a total of 238,249 votes counted. Table 1 summarizes the results of the election and shows that the results from Sarasota County exhibited a significantly higher undervote rate than in the other counties in the congressional district.

Table 1: Results from 2006 General Election for Florida Congressional District 13

County	Buchanan	Jennings	Undervotes	Total ballots cast	Percentage undervote
Charlotte	4,460	4,277	225	8,962	2.51
DeSoto	3,471	3,058	142	6,672	2.13
Hardee	2,629	1,686	269	4,584	5.87
Manatee	50,117	44,432	2,274	96,828	2.35
Sarasota	58,632	65,487	18,412	142,532	12.92
Total	119,309	118,940	21,322	259,578	

Source: GAO analysis of Florida Division of Elections, Charlotte County, DeSoto County, Hardee County, Manatee County, and Sarasota County data.

Note: Numbers do not add up because of overvotes—where voters select more than the maximum number of candidates allowed in a race; in this case, an overvote was a ballot that had votes for both Buchanan and Jennings.

As seen in table 1, about 18,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District. After the election results were contested in the House of Representatives, the task force met and unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. On June 14, 2007, we met with the task force and agreed upon an engagement plan. We reported on the status of our review at an interim meeting held by the task force on August 3, 2007.³

On October 2, 2007, we reported that our analysis of election data did not identify any particular voting machines or machine characteristics that could have caused the large undervote in the Florida-13 race.⁴ The undervotes in Sarasota County were generally distributed across all machines and precincts. We found that some of the prior tests and reviews conducted by the State of Florida and Sarasota County provided assurance that certain components of the voting system in Sarasota County functioned correctly, but they were not enough to provide reasonable assurance that the iVotronic DREs did not contribute to the undervote. We proposed three tests—firmware verification, ballot, and calibration—to provide increased assurance, but not absolute assurance, that the iVotronic DREs did not cause the large undervote in Sarasota County. We

³ GAO, *Elections: Status of GAO's Review of Voting Equipment Used in Florida's 13th Congressional District*, GAO-07-1167T (Washington, D.C.: Aug. 3, 2007).

⁴ GAO-08-97T.

stated that the successful conduct of the tests could reduce the possibility that the voting systems caused the undervote and shift attention to the possibilities that voters intentionally undervoted or voters did not properly cast their ballots on the iVotronic DRE, potentially because of issues relating to interaction between voters and the ballot.

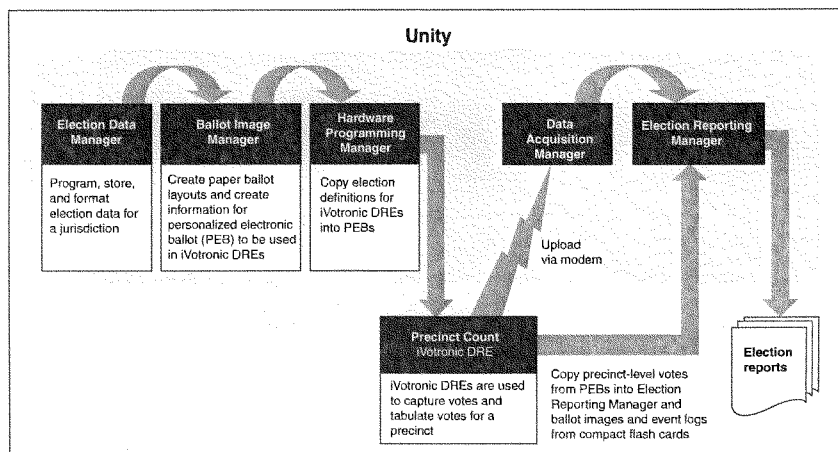
Overview of the Voting Systems Used in Sarasota County in the 2006 General Elections

In the 2006 general election, Sarasota County used voting systems manufactured by ES&S. The State of Florida has certified different versions of ES&S voting systems. The version used in Sarasota County was designated ES&S Voting System Release 4.5, Version 2, Revision 2, and consisted of iVotronic DREs, a Model 650 central count optical scan tabulator for absentee ballots, and the Unity election management system. It was certified by the State of Florida on July 17, 2006. The certified system includes different configurations and optional elements, several of which were not used in Sarasota County.⁵

The election management part of the voting system is called Unity; the version that was used was 2.4.4.2. Figure 1 shows the overall election operation using the Unity election management system and the iVotronic DRE.

⁵ In May 2007, the State of Florida enacted legislation requiring, in general, the use of optical scan voting equipment that provides a paper trail. These requirements are effective July 1, 2008. There is an exemption from these requirements for voting by persons with disabilities.

Figure 1: Overview of Election Operation Using the Unity Election Management System and iVotronic DRE

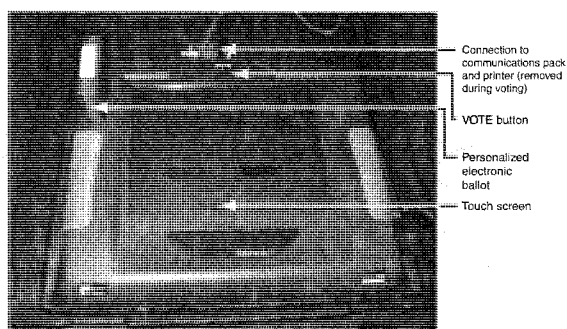


Source: GAO.

Sarasota County used iVotronic DREs for early and election day voting. Specifically, Sarasota County used the 12-inch iVotronic DRE, hardware version 1.1 with firmware version 8.0.1.2.⁶ Some of the iVotronic DREs are configured to use audio ballots, which are often referred to as Americans with Disabilities Act (ADA) machines. The iVotronic DRE uses a touch screen—a pressure-sensitive graphics display panel—to display and record votes (see fig. 2).

⁶ The certified version of ES&S Voting System Release 4.5, Version 2, Revision 2, specifies the use of iVotronic hardware version 1.0. According to Florida Division of Election officials, hardware version 1.1 of the iVotronic DRE has been available since at least 2004 and should have been included as a part of the certification for ES&S Voting System Release 4.5, Version 2, Revision 2. According to ES&S officials, iVotronic firmware version 8.0.1.2 runs in exactly the same manner on hardware versions 1.0 and 1.1.

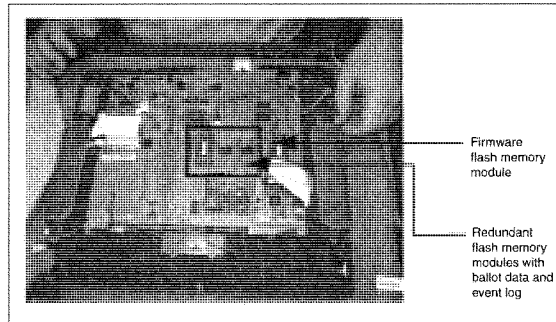
Figure 2: The iVotronic DRE Voting System and Its Components



Source: GAO.

The machine has a storage case that also serves as the voting booth. The operation of the iVotronic DRE requires the use of a personalized electronic ballot (PEB), which is a storage device with an infrared window used for transmission of ballot data to and from the iVotronic DRE. The iVotronic DRE has four independent flash memory modules, one of which contains the program code—firmware—that runs the machine; the remaining three flash memory modules store redundant copies of ballot definitions, machine configuration information, ballots cast by voters, and event logs (see fig. 3). The iVotronic DRE includes a VOTE button that the voter has to press to cast a ballot and record the information in the flash memory. The iVotronic DRE also includes a compact flash card that can be used to load sound files onto iVotronic DREs with ADA functionality. The iVotronic DRE's firmware can be updated through the compact flash card. Additionally, at the end of polling, the ballots and audit information are to be copied from the internal flash memory module to the compact flash card.

Figure 3: Inside View of the iVotronic DRE Showing the Flash Memory Modules



Source: GAO.

To use the iVotronic DRE for voting, a poll worker activates the iVotronic DRE by inserting a PEB into the PEB slot after the voter has signed in at the polling place. After the poll worker makes selections so that the appropriate ballot will appear, the PEB is removed and the voter is ready to begin using the system. The ballot is presented to the voter in a series of display screens, with candidate information on the left side of the screen and selection boxes on the right side (see fig. 4).

Figure 4: Second Ballot Page Showing the Congressional and Gubernatorial Races in Sarasota County's 2006 General Election

U.S. REPRESENTATIVE IN CONGRESS 13TH CONGRESSIONAL DISTRICT (Vote for One)		
Vern Buchanan	REP	<input type="checkbox"/>
Christine Jennings	DEM	<input type="checkbox"/>

STATE GOVERNOR AND LIEUTENANT GOVERNOR (Vote for One)		
Charlie Crist	REP	<input type="checkbox"/>
Jeff Hotkamp	DEM	<input type="checkbox"/>
Jim Davis	DEM	<input type="checkbox"/>
Daryl L. Jones	REP	<input type="checkbox"/>
Max Linn	REP	<input type="checkbox"/>
Tom Macklin	REP	<input type="checkbox"/>
Richard Paul Dembinsky	REP	<input type="checkbox"/>
Dr. Joe Smith	REP	<input type="checkbox"/>
John Wayne Smith	REP	<input type="checkbox"/>
James J. Kearney	REP	<input type="checkbox"/>
Karl C.C. Bohn	REP	<input type="checkbox"/>
Carol Castagnaro	REP	<input type="checkbox"/>
Write-In		<input type="checkbox"/>

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Source: Sarasota County Supervisor of Elections.

The voter can make a selection by touching anywhere on the line, and the iVotronic DRE responds by highlighting the entire line and displaying an X in the box next to the candidate's name. The voter can also change his or her selection by touching the line corresponding to another candidate or by deselecting his or her choice. "Previous Page" and "Next Page" buttons are used to navigate the multipage ballot. After completing all selections, the voter is presented with a summary screen with all of his or her selections (see fig. 5). From the summary screen, the voter can change any selection by selecting the race. The race will be displayed to the voter on its own ballot page. When the voter is satisfied with the selections and has reached the final summary screen, the red VOTE button is illuminated, indicating the voter can now cast his or her ballot. When the VOTE button is pressed, the voting session is complete and the ballot is recorded on the iVotronic DRE. In Sarasota County's 2006 general election, there were nine different ballot styles with between 28 and 40 races, which required between 15 and 21 electronic ballot pages to display, and 3 to 4 summary pages for review purposes.

Figure 5: First Summary Page in Sarasota County's 2006 General Election

Instructions	
Return to any contest by touching the contest title. To cast your ballot now, press the VOTE button.	
UNITED STATES SENATOR..... No Selection Made	STATE REPRESENTATIVE..... No Selection Made
U.S. REPRESENTATIVE IN CONGR..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
GOVERNOR AND LIEUTENANT GOV..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
ATTORNEY GENERAL..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
CHIEF FINANCIAL OFFICER..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
COMMISSIONER OF AGRICULTURE..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made

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Source: Sarasota County Supervisor of Elections.

Election Systems Involve People, Processes, and Technology

An election system is based upon a complex interaction of people (voters, election officials, and poll workers), processes (controls), and technology that must work effectively together to achieve a successful election. The particular technology used to cast and count votes is a critical part of how elections are conducted, but it is only one facet of a multifaceted election process that involves the interplay of people, processes, and technology.

As we have previously reported, every stage of the election process—registration, absentee and early voting, preparing for and conducting Election Day activities, provisional voting, and vote counting—is affected by the interaction of people, processes, and technology.⁷ Breakdowns in the interaction of people, processes, and technology may, at any stage of

⁷ GAO, *Elections: The Nation's Evolving Election System as Reflected in the November 2004 General Election*, GAO-06-450 (Washington, D.C.: June 6, 2006).

an election, impair an accurate vote count. For example, if the voter registration process is flawed, ineligible voters may be allowed to cast votes. Poll worker training deficiencies may contribute to discrepancies in the number of votes credited and cast, if voter information was not entered properly into poll books. Mistakes in using the DRE systems could result from inadequate understanding of the equipment on the part of those using it.

As noted in our October statement, we recognize that human interaction with the ballot layout could be a potential cause of the undervote, and we noted that several suggestions have been offered as possible ways to establish that voters are intentionally undervoting and to provide some assurance that the voting systems did not cause the undervote.⁸ For instance,

- A voter-verified paper trail could provide an independent confirmation that the touch screen voting systems did not malfunction in recording and counting the votes from the election. The paper trail would reflect the voter's selections and, if necessary, could be used in the counting or recounting of votes. This issue was also recognized in the source code review performed by the Security and Assurance in Information Technology (SAIT) laboratory at Florida State University as well as the 2005 and draft 2007 Voluntary Voting Systems Guidelines prepared for the Election Assistance Commission. We have previously reported on the need to implement such a function properly.⁹
- Explicit feedback to voters that a race has been undervoted and a prompt for voters to affirm their intent to undervote might help prevent many voters from unintentionally not casting a vote in a race. On the iVotronic DREs, such feedback and prompts are provided only when the voter attempts to cast a completely blank ballot, but not when a voter fails to vote in individual races.
- Offering a "none of the above" option in a race would provide voters with the opportunity to indicate that they are intentionally undervoting. For example, the State of Nevada provides this option in certain races in its elections.

⁸ GAO-08-97T.

⁹ GAO, *Elections: Federal Efforts to Improve Security and Reliability of Electronic Voting Systems Are Under Way, but Key Activities Need to Be Completed*, GAO-05-956 (Washington, D.C.: Sept. 21, 2005).

We reported that decisions about these or other suggestions about ballot layout or voting system functions should be informed by human factors studies that assess such measures' effectiveness in accurately recording voters' preferences, making voting systems easier to use, and preventing unintentional undervotes.

Tests Confirm Sarasota County iVotronic DREs Used Same Firmware Certified by Florida

We previously reported that having reasonable assurance that all iVotronic DREs that recorded votes in the 2006 general election were running the same certified firmware would allow us to have more confidence that the iVotronic DREs will behave similarly when tested.¹⁰ Consequently, if we are reasonably confident that the same firmware was running in all 1,499 machines, then we are more confident that the results of other tests, conducted both by GAO and by others, on a small number of machines can be used to obtain increased assurance that the iVotronic DREs did not cause the undervote. We also reported that there was a lack of assurance that the source code that was held in escrow by the Florida Division of Elections and that was previously reviewed by Florida State University and by us, if rebuilt, would corresponded to the firmware that was certified and held in escrow by the Florida Division of Elections. We found that the firmware on a statistically selected sample of 115 iVotronic DREs was the same as that certified by the Florida Division of Elections. We also found that the escrowed source code, when rebuilt into executable firmware, corresponded to the 8.0.1.2 firmware that was certified by the Florida Division of Elections.

Methodology for Firmware Verification Testing

Our methodology to obtain reasonable assurance that the firmware used on Sarasota County's iVotronic DREs during the 2006 general election was the same as that certified by the State of Florida was broken down into two basic steps: (1) selecting a representative sample of machines, and (2) verifying that the firmware extracted from the voting machines was the same as the escrowed firmware that had been certified by the Florida Division of Elections. Appendix I details the methodology for selecting the representative sample of machines. Appendix II contains a list of the serial numbers of the tested iVotronic DREs.

To ensure that we would be testing with the iVotronic firmware certified by the Florida Division of Elections, on October 18, 2007, we and officials

¹⁰ GAO-08-97T.

from the Florida Division of Elections made two copies of the escrowed iVotronic 8.0.1.2 firmware on compact discs (CD) and placed them in two tamper-evident bags with serial numbers. The bags were subsequently hand-delivered by a Florida Division of Elections official for our use in the firmware verification test and for the rebuilding of the firmware from the source code.

In order to extract the firmware from an iVotronic DRE, the machine was placed on an anti-static mat and the case was opened using a special screwdriver. After lifting the case, a special extraction tool was used to remove the flash memory module that contains the firmware. The flash memory module was then inserted in the socket of a Needham Electronics' EMP-300 device that was connected to the universal serial bus (USB) port of a personal computer (PC). The EMPWin application running on that PC was used to read the firmware from the flash memory module and save the extracted firmware on the PC. The Florida Division of Elections loaned us the EMP-300 and EMPWin application for use in extracting firmware from the flash memory module.

To compare the extracted firmware with the escrowed version, we relied on two commercially available software programs. First, we acquired a license for PrestoSoft's ExamDiff Pro software that enables comparison of files. The ExamDiff Pro software is a commercially available program designed to highlight the differences between two files. For each selected iVotronic DRE, the extracted firmware was compared with the escrowed version with any differences highlighted by the program.

Second, to further ensure that the extracted firmware matched the escrowed firmware, we compared the SHA-1 hash value of the extracted firmware to the hash value of the comparable certified firmware.¹¹ We computed the SHA-1 hash by using the Maresware hash software that was provided by the Florida Division of Elections. In order to ensure that the commercial Maresware hash software properly calculated the SHA-1 hash value, we (1) created four files and obtained a fifth file that contained

¹¹ The National Institute of Standards and Technology (NIST) has issued a Federal Information Processing Standard (FIPS) that describes four hashing algorithms that are iterative, one-way hash functions that can process a file and produce a condensed representation called a message digest or "hash." These algorithms enable the user to validate a file's integrity since any change to the file will, with a very high probability, result in a different message digest. The technical details of this process are contained in FIPS 180-2. The algorithm selected for this testing effort is commonly referred to as SHA-1 and is the same algorithm used by the Florida Division of Elections during its audit.

executable code, (2) obtained hash values for each file by either using an external program that generated the hash values using the same hashing algorithm as the commercial product or using known hash values,¹² and (3) used the commercial program acquired for testing the firmware to ensure that the hash values it generated for these five files were identical to the expected hash values for those files. In each case, the hash values generated by the commercial program were identical to the expected values. Accordingly, reasonable assurance for the purposes of our review was obtained that the commercial program produced its hash values in accordance with the NIST algorithm.

At the end of each day, we (1) used the commercial Maresware software to compute hash values for each of the firmware programs that had been unloaded during that day and all previous days, and (2) compared each hash created by this program to the expected value that was calculated from the firmware that had been escrowed by the Florida Division of Elections. This comparison provided further assurance that the extracted firmware was (1) identical to the version escrowed by the Florida Division of Elections when the hashes agreed, or (2) different if the hashes did not agree.

We also verified that sequestered machines were not used since the 2006 general election. For each of these sequestered machines, we used an audit PEB to copy the audit logs onto a compact flash card and then used the Unity election reporting manager to generate event log reports. We examined the event logs for the date and time of occurrence of activities that would indicate whether the machine had been used. Lack of such activities since the 2006 general election provided reasonable assurance that the machines had not been used since they were sequestered.¹³

In addition, to verify that the source code for iVotronic DRE firmware version 8.0.1.2 previously examined by the Florida State University SAIT source code review team and by GAO corresponded with the version

¹² Two of the files and the expected values used came from FIPS 180-2.

¹³ We verified that sequestered machines were not used since the 2006 general election by (1) verifying that the seals placed on these machines agreed with Sarasota County's records, and (2) checking the event logs maintained on the machine to determine whether the machines had been used since the machine had been sequestered. In every case, we found that the seal numbers agreed with Sarasota County's records. We were able to check the event log for 57 of the 58 sequestered iVotronic DREs. We were unable to power up the remaining iVotronic DRE and were consequently unable to extract the needed audit data.

certified by the Florida Division of Elections, ES&S officials stated that it still had the development environment that could be used to compile, or rebuild, the certified firmware from the source code retained in escrow by the Florida Division of Elections.¹⁴ As we previously noted, a software review and security analysis of the iVotronic DRE firmware was conducted by a team led by Florida State University's SALT laboratory.¹⁵ The software review team attempted to confirm or refute many different hypotheses that, if true, might explain the undervote in the race for the 13th Congressional District. In doing so, they made several observations about the source code, which we were able to independently verify.

The rebuilding of the firmware was conducted by ES&S at its Rockford, Illinois, facility on November 19, 2007, and witnessed by us. Prior to the rebuild, the Florida Division of Elections provided an unofficial copy of the source code to ES&S so that ES&S could prepare the development environment and test the rebuild steps. Using the official sealed copy of the source code CD, ES&S rebuilt the firmware in front of GAO representatives. ES&S described the development environment and we inspected it to satisfy ourselves that the firmware was faithfully rebuilt using the escrowed source code. After the rebuilding of the firmware, the certified version of 8.0.1.2 firmware was compared with the rebuilt version using PrestoSoft's ExamDiff Pro.

Results of Firmware Verification Testing

While the Florida audit team had previously confirmed that the firmware running on six iVotronic DREs matched the certified version held in escrow by the Florida Division of Elections, we found that the sample size was too small to support generalization to all 1,499 iVotronic DREs that recorded votes during the 2006 general election. Accordingly, we conducted a firmware verification test on a statistically valid sample of 115 iVotronic DRE machines used by Sarasota County during the 2006 general election. The selected machines fell into two groups—machines that had not been used since the 2006 general election (referred to as sequestered

¹⁴ In our October 2007 statement, we reported that according to ES&S, firmware compiled from the Florida escrowed source code may not be exactly identical to the firmware certified by the Florida Division of Elections because the embedded date and time stamp in the firmware would be different. We found that the date and time was not embedded in the firmware and that an identical version could be created.

¹⁵ Security and Assurance in Information Technology Laboratory, Florida State University, *Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware* (Tallahassee, Florida: Feb. 23, 2007).

machines) and machines that had been used in subsequent elections. For each machine, we extracted the firmware from a flash memory module in that machine and then compared the extracted firmware with the escrowed version using commercially available file comparison tools to determine whether they agreed. We found that the firmware installed in the flash memory module of each machine matched the escrowed firmware that had been certified by Florida. The statistical approach used to select these machines lets us estimate with a 99 percent confidence level that at least 1,439, or 96 percent, of the 1,499 machines used in the 2006 general election used the firmware that was certified by the State of Florida.

We witnessed the rebuild of the iVotronic DRE's firmware from the source code that was held in escrow by the Florida Division of Elections and that was previously reviewed by Florida State University and by us. At ES&S's software development facility, we observed that rebuilding the firmware from the escrowed source code resulted in the same firmware that was certified and held in escrow by the Florida Division of Elections. The comparison of the escrowed firmware to the version that was rebuilt by the vendor identified no differences and provides us reasonable assurance that the escrowed firmware corresponded to the escrowed source code. The successful rebuilding of the firmware from the escrowed source code enables us to have greater confidence in the conclusions derived from prior source code reviews by Florida State University and us.

Ballot Testing Showed That Machines Accurately Recorded and Counted Ballots

In our October 2007 statement, we noted that there were 112 common ways a voter may interact with the system to select a candidate in the Florida-13 race and cast the ballot, and that prior testing of the iVotronic DREs covered only 13 of these 112 possible ways. We developed 224 test ballots to verify that the iVotronic DRE could accurately capture ballots using each of these 112 common ways a voter may interact with the system; 112 test ballots were cast on one machine configured for early voting, and another 112 ballots were cast on nine machines configured for election day voting. Our tests showed that for each of the 224 test ballots, the iVotronic DRE correctly captured each vote as cast for the Florida-13 race. We also conducted firmware verification tests on these machines and verified that they were running the certified firmware.

Methodology for Ballot Testing

The methodology for ballot testing can be broken into two major areas—development of the test ballots and execution of the test using those ballots. The following sections discuss these areas.

Development of Test Ballots

In examining how the system allowed voters to make a selection in the Florida-13 race, we found at least 112 different ways a voter could make his or her selection and cast the ballot in the Florida-13 race, assuming that it was the only race on the ballot. Specifically, a voter could (1) initially select either candidate or neither candidate (i.e., undervote), (2) change the vote on the initial screen, and (3) use a combination of features to change or verify his or her selection by using the page back and review screen options. Accordingly, we tested these 112 ways to select a candidate on the early voting machine and on the election day machines (224 test ballots in total).

The 112 standard test ballots cover all combinations of the following types of voter behavior:

- Voter makes selection on the initial ballot screen and makes no changes or takes any other action to return to the contest to review or change selection.
- Voter makes selection on the initial ballot screen and decides before leaving that screen to change the selection because of an error in selecting the candidate or for some other reason.
- Voter makes selection on the initial ballot screen and then decides to use the page back option to review or change selection.
- Voter makes selection on the initial ballot screen and continues to the review screen and then decides to use the review screen option to review or change selection.
- Voter makes selection on the initial ballot screen and uses a combination of page back and review screen options to review or change selection.

In each instance where a selection could be made, three choices were possible for the Florida-13 race: a selection for one of the two candidates, or no selection (i.e., an undervote).

In developing the standard test ballots, we did not consider all combinations of some other types of voter behavior that would have significantly increased the number of test cases without providing significant benefits. In most cases, such behavior are variants of the primary voter behavior that we examined. The following are examples of

voter behavior that were not included in the standard test set in order to reduce the number of test cases to practicable levels:

- Using a one-touch or two-touch method to make changes on a ballot page.¹⁶
- Varying the number of pages a voter may go back ("page backs") to return to the page containing the Florida-13 race to change or review a selection.
- Casting a ballot from the review screen selection. The VOTE button is not activated until the voter reaches the last review screen. However, once the VOTE button has been activated, a ballot may be cast from any screen. For example, a voter may activate the VOTE button and then return to a contest to review or change the selection using the review screen option. Once the voter goes to the contest from the review screen and makes any desired changes, the voter can then cast the ballot from that screen rather than going back to the last page of the review screen or even the review screen that was used to return to the selection.

Although we did not consider all combinations of these types of voter behavior when developing the standard test ballots, we included some of these user interactions in the execution of applicable test ballots to provide increased assurance that the system would handle these voter behaviors. For each applicable test ballot, we randomly determined the test procedure that should be used for the following attributes:

- **Initial change method** – The standard test ballots address voters making changes on the initial ballot screen. Where possible, the method used to change (one-touch or two-touch) the selection was randomly selected.

¹⁶ The iVotronic DREs used in Sarasota County allow the user to make changes using two methods. The first method allows the user to simply touch the other candidate; e.g., Candidate A is initially selected and the voter decides to select Candidate B by touching the name of Candidate B. We referred to this as the "one-touch method." The other method, referred to as the "two-touch method," involves the user first deselecting the initial choice and then making another selection; e.g., Candidate A is initially selected and the voter decides to select Candidate B by (1) touching the name of Candidate A, which deselects Candidate A, and then (2) touching the name of Candidate B to select it.

-
- **Number of page backs** – The ballots used by Sarasota County included the page back function. After reviewing the ballots, it appeared reasonable to expect that voters who may have used the page back option would probably decide that they had missed the race by the time they went one or two pages beyond the page with the Florida-13 race. Therefore, when a standard test ballot contained a page back requirement, the number of page backs was randomly selected to determine whether one or two page backs should be used.
 - **Page back change method** – Some test ballots required a change after the page back option was selected. As with the initial change method, where possible, the method of changing (one-touch or two-touch) the selection was randomly assigned.
 - **Review screen change method** – The system displays a review screen that shows the voter's selections (or lack of selections) after the voter has progressed through all contests. On the review screen, the voter can select a race to go directly to that contest and (1) review the selection made, and (2) make any desired corrections. The standard test ballots were designed to cover this type of event. Where possible, the method used to make the change (one-touch or two-touch) was randomly selected.
 - **Activate VOTE button and cast ballots from the review screen** – In order to test casting ballots from locations other than the last review screen, the VOTE button must be activated prior to going to a screen where the ballot is cast.¹⁷ In order to determine which test ballots should be used for this test, a two-step approach was adopted. First, a random selection of the ballots that use the review screen option was made to determine which test ballots should have the VOTE button activated. Then a random selection of these test ballots was made to determine whether the ballot should be cast from the review screen selection.

Besides those attributes that directly affect the selection in the Florida-13 race, we varied the other attributes on the ballot in order to complete the

¹⁷ The actual procedure is to (1) go to the last review screen, which activates the VOTE button, (2) page back to the contest (normally 2 or 3 page backs depending on the ballot style), and (3) selecting the contest on the review screen that should be revisited. We assumed that voters would cast such ballots using this procedure instead of using the page back option because it did not appear reasonable that a voter would page back at least 17 screens to reach the Florida-13 race, which was the focus of the testing.

ballot test. For each of the 224 test ballots, we used random values for other attributes, including the following:

- **Ballot style** – Each ballot was randomly assigned one of the nine ballot styles used in the election.
- **Write-in candidate** – All ballot styles includes write-in options in at least 2 races —United States Senate and State Governor/Lieutenant Governor. To verify that the iVotronic DRE accurately recorded the selection in the Florida-13 race for each test ballot, we needed a way to identify each test ballot in the ballot image log. To accomplish this, we randomly selected one of these two races, selected the write-in candidate for the race, and entered a unique value (i.e., the test ballot number) in the write-in field.
- **Candidates and selections in other races on the ballot** – Each ballot style had between 28 and 40 contests on the ballot. The values for the contests besides the Florida-13 race and the write-in field were also randomly selected. For example, most items had three possible choices—candidate 1 (or Yes), candidate 2 (or No), and undervote. Which of these three values was used for a given contest was randomly determined.

The values used for these attributes were independently determined for the election day and early voting test ballots. For example, Test Ballot 2 (election day) and Test Ballot 202 (early voting) were designed to test the same standard condition described by one of the 112 standard test ballots.¹⁸ Table 2 illustrates some of the similarities and differences between the two test ballots that result from the random selection process used to determine the other aspects of the ballot.

¹⁸ The standard actions taken in these two test ballots called for the tester to (1) make a selection on the initial screen and then change the selection, (2) page back to the initial selection screen and change the selection, and (3) use the review screen option to change the selection again.

Table 2: Examples of Differences between Test Ballot 2 and Test Ballot 202

Test item	Test Ballot 2	Test Ballot 202
Precinct	142	143
Ballot style	6	7
Contest used to contain unique value used to identify the test ballot during the review process.	Governor/Lieutenant Governor	U.S. Senate
Method used to make change on initial screen for contest	Two-touch	One-touch
Number of page backs to return to contest	2	1
Method used to make change after paging back to contest	Two-touch	Two-touch
Activate VOTE button prior to using the review screen to return to the contest	No	Yes
Selection for Attorney General	McCollum	Campbell
Selection for Constitutional Amendment 1	No	Undervote
Selection for Constitutional Amendment 8	No	No
Method used to make change using the review screen approach	Two-touch	Two-touch
Cast ballot from contest selection	No	Yes
Return to review screen and then cast ballot	Yes	No

Source: GAO.

Finally, we selected 10 random machines to be used for the ballot testing.¹⁹ One machine was selected from those that were used in early voting in the 2006 general election. The other nine were selected from those that used each of the ballot styles on election day in the 2006 general election.²⁰ For each election day machine, the assigned precinct was the same as the precinct where the machine was used during the 2006 general election. For the early voting machine, we needed to assign precincts for each ballot style. We used the precinct associated with the back-up machine used for election day testing as the precinct for that ballot style.²¹ If the first back-up machine was assigned the same precinct number as the primary election day machine, then we used the precinct associated with the second back-up machine. This approach was taken to maximize the number of precincts used in the testing efforts.

¹⁹ Details on the random selection can be found in appendix I.

²⁰ We excluded machines from one precinct that used two ballot styles instead of one.

²¹ In order to ensure that we could complete our tests even if a machine selected for testing failed to operate, our statistical sampling methodology generated a list of machines that could be used as replacements and still maintain the integrity of the testing process. These are referred to as "back-up" machines.

Process Used in Executing the Ballot Test

A two-person test team conducted the ballot testing. One tester read out aloud the steps called for in the test ballot while the other tester performed those actions. In order to ensure that all of the actions relating to the Florida-13 congressional race were performed as laid out in the test ballots, a two-person review team observed a video display of the test and compared the actions taken by the tester to those called for in the test ballot. Furthermore, after the testing was completed, another team reviewed the video recording of these tests to validate that the actions relating to the Florida-13 contest taken by the tester were consistent with those called for by the test ballots.²²

The criteria used to determine whether the test produced the expected result was derived from the Florida Voting System Standards.²³ Specifically, among other things, these standards require the system to allow the voter to (1) determine whether the inputs given to the system have selected the candidates that he or she intended to select, (2) review the candidate selections made by the voter, and (3) change any selection previously made and confirm the new selection prior to the act of casting the ballot. Furthermore, the system must communicate to the voter the fact that the voter has failed to vote in a race (undervote) and require the voter to confirm his or her intent to undervote before casting the ballot. During the ballot test, the actual system response was compared to the expected results by a review team and after the testing was completed another review team compared the video records to the test ballots to validate that the tests had been performed in accordance with test scripts for the Florida-13 contest.

At the beginning of testing on each iVotronic DRE, the machine was opened for voting and a zero tape was printed. After the casting of all test ballots on the machine, the machine was closed and a results tape was printed. The closing of the machine also writes the audit data to the compact flash card, including event data and ballot images. We examined the results tapes and compared the total votes cast for the Florida-13 contest against what was expected from the test ballots. We also kept

²² These two reviews identified two early voting and seven election day test ballots where the specified scripts were not followed exactly for the Florida-13 contest. Because these test ballots had not followed the test script for the Florida-13 contest exactly, they were retested. Accordingly, the testing efforts resulted in 233 actual ballots being cast.

²³ Florida Department of State, *Florida Voting System Standards*, Form DS-DE 101 (Jan. 12, 2005).

track of the total number of ballots handled by the machine, called the “protective count” of an iVotronic DRE, before and after the test and confirmed that the increase in protective count matched the number of test ballots cast on that machine.²⁴

Using the Unity election reporting manager, we read the compact flash cards and processed the audit data on each ballot test machine. We generated the ballot image log and examined the individual test ballots in the ballot image log. We looked for the unique identifier that was used for each test ballot and then confirmed that the ballot image reflected the correct selection for the Florida-13 race as called for by the test ballot. For example, the test script for Test Ballot 1 required the tester to (1) select a write-in candidate for U.S. Senate and (2) enter the value of “TB1” in the write-in field. Because only this test ballot used this value, we could review the ballot image log to determine what selection the voting machine recorded for the Florida-13 contest for the ballot showing “TB1” as the write-in candidate for U.S. Senate.²⁵

Finally, using the process discussed previously for firmware testing, the firmware on all machines used for ballot testing was validated to ensure these machines used the same firmware that had been certified by the Florida Division of Elections.

Results of Ballot Testing

After executing the ballot tests on the election day and early voting machines, we found that all 10 iVotronic DREs captured the votes for the Florida-13 race on the test ballots accurately. We used a unique identifier in a write-in field in each test ballot and verified that the iVotronic DRE accurately captured the tester’s final selections in the Florida-13 race for each test ballot.

²⁴ The iVotronic DRE is designed to maintain a count of all ballots cast on a given machine and functions much like an automobile’s odometer. The protective count can be used to help ensure that the election process did not lose any votes. For example, before a machine is sent to a precinct, the protective count is recorded. Accordingly, if the precinct’s voting register show that 100 individuals voted, then the increase in the protective counts for all machines assigned to that precinct should increase by 100. This value can then be compared to the actual votes recorded in the election to ensure that the values are consistent; i.e., the results tape for the election shows that 100 votes have been accounted for during this election using this example precinct.

²⁵ In some cases, a test ballot had to be reentered because the original test did not follow all of the desired actions associated with the Florida-13 contest. In these cases, the value entered was made unique by adding a letter to the value, e.g., “TB1A”.

Testing 112 ways to select a candidate on a single machine also provided us some additional assurance that the volume of ballots cast on election day did not contribute to the undervote. We noted that casting 112 ballots on a single machine was more than the number of ballots cast on over 99 percent of the 1,415 machines used on election day.

**Deliberately
Miscalibrated
iVotronic DREs
Accurately Recorded
Displayed Ballots**

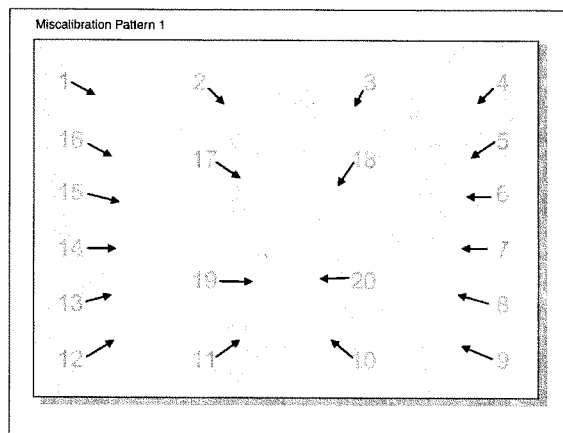
Because little was known about the effect of a miscalibrated machine on the behavior of an iVotronic DRE, we deliberately miscalibrated two iVotronic DREs using 10 different miscalibration methods to verify the functioning of the machine. Although the miscalibration made the machine more difficult to use, the 39 ballots used in this test confirmed that the system correctly recorded the displayed vote for the Florida-13 contest and did not appear to contribute to the undervote.

**Methodology for
Calibration Testing**

For the calibration testing, we judgmentally selected five different miscalibration patterns and repeated each pattern twice—once with a small amount of miscalibration and the second time with a large amount of miscalibration. The amount of miscalibration was also subjective—roughly 0.25 to 0.5 inch for a small amount and about 0.7 to 1 inch for a large miscalibration.

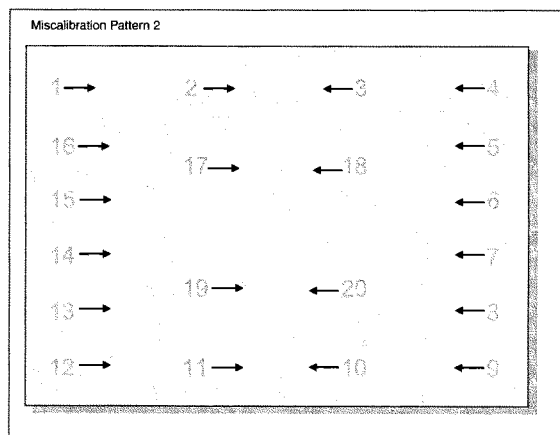
The miscalibration patterns are shown in the following figures.

Figure 6: Miscalibration Pattern 1: For Each Calibration Point, the Tester Touches a Point Shifted Diagonally Inward



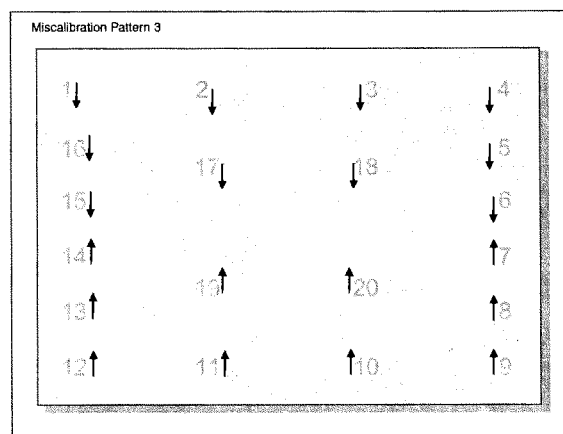
Source: GAO.

Figure 7: Miscalibration Pattern 2: For Each Calibration Point, the Tester Touches a Point Shifted Horizontally Inward



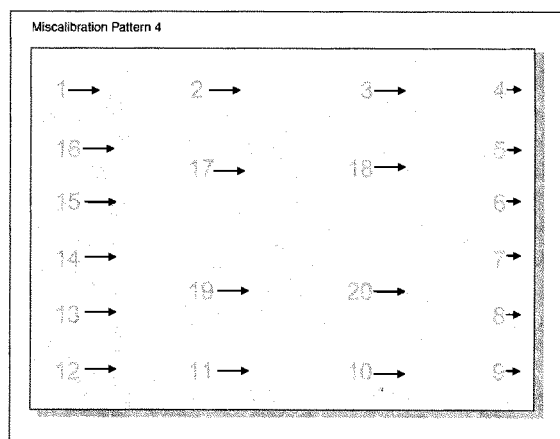
Source: GAO.

Figure 8: Miscalibration Pattern 3: For Each Calibration Point, the Tester Touches a Point Shifted Vertically Inward



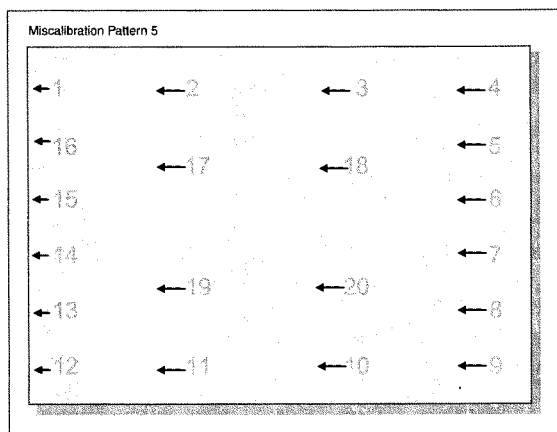
Source: GAO.

Figure 9: Miscalibration Pattern 4: For Each Calibration Point, the Tester Touches a Point Shifted Horizontally to the Right



Source: GAO.

Figure 10: Miscalibration Pattern 5: For Each Calibration Point, the Tester Touches a Point Shifted Horizontally to the Left



Source: GAO.

We conducted calibration testing on two different machines that were used for ballot testing.²⁶ As with ballot testing, at the beginning of testing of each machine, we opened the machine for voting and printed a zero tape. During the opening process, we calibrated the machine with one of the miscalibration patterns. After the machine was miscalibrated, we then executed at least three of the test ballots that were used during ballot testing on that machine for each test.²⁷ The test ballots were rotated among

²⁶ The approach used to select these machines is described in appendix I.

²⁷ In the testing of the first two miscalibration patterns for the first machine, all the test ballots used in the ballot testing for that machine were repeated. However, the individual performing the testing soon recognized the changes that were needed to compensate for the miscalibration. Accordingly, the tester did not make as many attempts to perform the desired function in the later cases as with the first three cases. Therefore, for the remaining eight miscalibration test patterns, we executed three test ballots per pattern because these cases produced the greatest likelihood of generating spurious touches before obtaining the desired selection.

the miscalibration patterns. For example, one of the machines had eight different ballot test scripts. The first three were used on one miscalibration pattern, the next three on another miscalibration pattern, and the final two plus the first one would be used on another miscalibration pattern. After the ballots were cast for one miscalibration pattern, the machine would be miscalibrated with another pattern. After the needed miscalibration patterns were tested on a machine, the iVotronic DRE was closed and a results tape was printed. The closing of the iVotronic DRE also wrote the audit data to the compact flash card.

During the testing, the tester was instructed to take whatever actions were necessary to achieve the desired result. For example, if the script called for the selection of Candidate A, then the tester would keep touching the screen until Candidate A was selected. A review team monitored the testing to ensure that (1) the proper candidate for the Florida-13 congressional race was ultimately selected and (2) the review screen showed this candidate selection when it was first presented.

As with the ballot test, we used the Unity election reporting manager to read the compact flash cards and processed the audit data for each ballot test machine. We generated the ballot image log and examined the individual test ballots in the ballot image log. We looked for the unique identifier that was used for each test ballot and then confirmed that the ballot image reflected the correct selection for the Florida-13 race as called for by the test ballot. After the testing had been completed, the expected results shown in the test ballot scripts were compared to the actual results contained in the ballot image log and the results tape using the same process discussed in the ballot testing methodology.

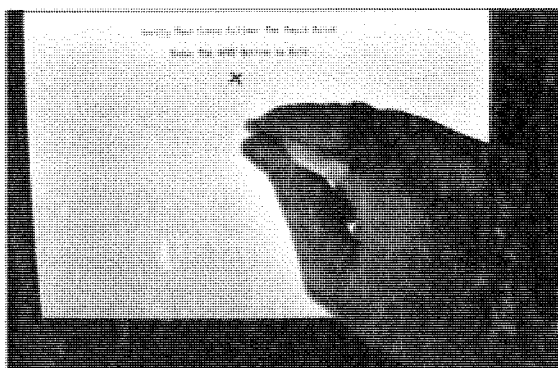
Results of Calibration Testing

The 39 ballots used in this test confirmed that the system correctly recorded the displayed vote for the Florida-13 contest. We also noted that the miscalibration clearly made the machines harder to use and during an actual election these machines would have probably been either recalibrated or removed from service once the voter brought the problem to the precinct's attention, according to a Sarasota County official who observed the tests.²⁸

²⁸ Our review of the election day records identified two reported cases on election day where the miscalibration of the iVotronic DRE led to its closure and discontinued use for the rest of the day.

Figure 11 shows an example of effects of our miscalibration efforts on the screen that is used to confirm the calibration results. Specifically, the stylus points to where the tester is touching the screen while the "X" on the screen shows where the machine indicated the stylus was touching the screen.²⁹ In a properly calibrated machine, the stylus and the "X" are basically at the same point.

Figure 11: Example of the Effects of a Miscalibrated Machine on the Calibration Screen

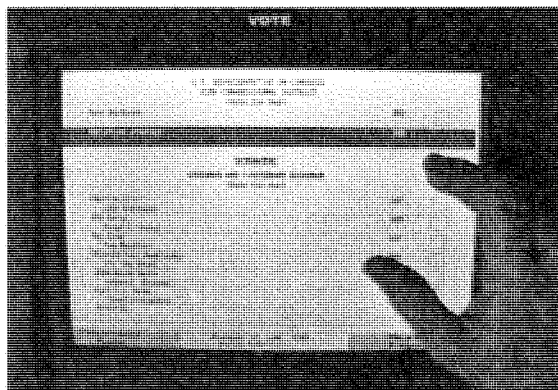


Source: GAO.

Figure 12 shows an example of where the tester is touching the screen to make a selection and how this "touch" is translated into a selection. As can be seen, the finger making the selection is touching a position that in a properly calibrated machine would not result in the selection shown. However, the machine clearly shows the candidate selected and our tests confirmed that for the 39 ballots tested, the candidate actually shown by the system as selected (in this example, the shaded line) was the candidate shown on the review screen, as well as the candidate that received the vote when the ballot was cast.

²⁹ While votes are normally cast using fingers on the touch screen, a stylus is normally used during the calibration process.

Figure 12: Example of the Effects of a Miscalibrated Machine on a Candidate Selection



Source: GAO.

Conclusions

Our tests showed that (1) the firmware installed in a statistically selected sample of machines used by Sarasota County during the 2006 general election matched the firmware certified by the Florida Division of Elections, and we confirmed that when the manufacturer rebuilt the iVotronic 8.0.1.2 firmware from the escrowed source code, the resulting firmware matched the certified version of firmware held in escrow, (2) the machines properly displayed, recorded, and counted the selections for all test ballots cast during the ballot testing involving the 112 common ways a voter may interact with the system to cast a ballot for the Florida-13 race, and (3) the machines accurately recorded the test ballots displayed on deliberately miscalibrated machines. The results of these tests did not identify any problems that would indicate that the iVotronic DREs were responsible for the undervote in the Florida-13 race in the 2006 general election.

As we noted when we proposed these tests, even after completing these tests, we do not have absolute assurance that the iVotronic DREs did not

play any role in the large undervote. Absolute assurance is impossible to achieve because we are unable to recreate the conditions of the election in which the undervote occurred. Although the test results cannot be used to provide absolute assurance, we believe that these test results, combined with the other reviews that have been conducted by Florida, GAO, and others, have significantly reduced the possibility that the iVotronic DREs were the cause of the undervote. At this point, we believe that adequate testing has been performed on the voting machine software to reach this conclusion and do not recommend further testing in this area. Given the complex interaction of people, processes, and technology that must work effectively together to achieve a successful election, we acknowledge the possibility that the large undervote in Florida's 13th Congressional District race could have been caused by factors such as voters who intentionally undervoted, or voters who did not properly cast their ballots on the iVotronic DRE, potentially because of issues relating to interaction between voters and the ballot.

Comments

We provided draft copies of this statement to the Secretary of State of Florida and ES&S for their review and comment. We briefed the Sarasota County Supervisor of Elections on the contents of this statement and asked for their comments. The Florida Department of State provided technical comments, which we incorporated. ES&S and the Sarasota County Supervisor of Elections provided no comments.

Mr. Chairman, this completes my prepared statement. I would be happy to respond to any questions you or other Members of the Task Force may have at this time.

Contact and Acknowledgments

For further information about this statement, please contact Naba Barkakati at (202) 512-6412 or barkakatin@gao.gov. Contact points for our Office of Congressional Relations and Public Affairs may be found on the last page of this statement. Other key contributors to this statement include James Ashley, Stephen Brown, Francine Delvecchio, Cynthia Grant, Geoffrey Hamilton, Richard Hung, Douglas Manor, John C. Martin, Jan Montgomery, Daniel Novillo, Deborah Ortega, Keith Rhodes, Sidney Schwartz, Patrick Tobo, George Warnock, and Elizabeth Wood. We also appreciate the assistance of the House Recording Studio in the video recording of the tests.

Appendix I: Methodology for Selecting IVotronic DREs for GAO Testing

Each of the three tests—firmware verification, ballot, and calibration—was conducted on a sample of the 1,499 iVotronic DREs that recorded votes during the 2006 general election in Sarasota County, Florida. We selected 115 iVotronic DREs for the firmware test, 10 for the ballot test, and 2 for the calibration test. Appendix II contains the serial numbers of the iVotronic DREs that were tested.

Firmware Test Sample

We selected a stratified random probability sample of iVotronic DREs from the population of 1,499. The sample was designed to allow us to generalize the results of the firmware sample to the population of iVotronic DREs used in this election. We stratified the population into two strata based on whether the machines had been sequestered since the 2006 general election. There were a total of 818 machines that were sequestered and 681 machines that had been used in subsequent elections. The population and sample are described in table 3.

We calculated the sample size in each stratum using the hypergeometric distribution to account for the relatively small populations in each stratum. We determined each sample size to be the minimum number of machines necessary to yield an upper bound of 7.5 percent, at the 99 percent confidence level, if we observed zero failures in the firmware test. Assuming that we found no machines using an uncertified firmware version, these sample sizes allowed us to conclude with 99 percent confidence that no more than 7.5 percent of the machines in each stratum were using uncertified firmware. Further, this sample allowed us to conclude that no more than 4 percent of the 1,499 iVotronic DREs were using uncertified firmware, at the 99 percent confidence level.

Table 3: Description of the Stratified Population and Sample Sizes for the Firmware Test

Stratum	Population size	Sample size
Sequestered machines	818	58
Non-sequestered machines	681	57
Total	1,499	115

Source: GAO based on analysis of Sarasota County voting data.

An additional five sequestered machines and five non-sequestered machines were selected as back-up machines should there be problems in locating the selected machines or some other problem that prevented testing them.

Ballot Test Sample

We randomly selected a total of 10 machines from the population of 1,384 machines that were not selected in the firmware test sample. This sample size is not sufficient to allow us to make direct generalizations to the population. However, if we are reasonably confident that the same software is used in all 1,499 machines, then we are more confident that the results of the other tests on a small number of machines can be used to obtain increased assurance that the iVotronic DREs did not cause the undervote. We randomly selected one machine from each of the nine ballot styles used during the general election and one machine from the machines used for early voting.¹ In case of problems in operating or locating the machines, we also selected randomly selected two additional machines for each ballot style and for early voting.

Calibration Test Sample

The two iVotronic DREs selected for calibration testing were selected from those tested in the ballot test. Because the machines used for the ballot tests included an ADA machine and "standard" machines, we selected one of each for calibration testing. Although we did not test the ADA capabilities of the ADA machine (e.g., the audio ballots), we found that the on-screen appearance of selections on the ADA machine differed slightly from that on non-ADA machines. For example, the standard non-ADA machine displayed a blue bar across the screen and an X in the box next to the candidate's name when a selection was made, while an ADA machine only showed an X in the box next to the candidate's name.

¹ We also excluded those election day machines from one precinct that supported two different ballot styles.

Appendix II: List of Machines Tested by GAO

Table 4 lists the iVotronic DREs that were tested by GAO. For each machine, the table shows whether the machine was sequestered and what type of testing was conducted on the machine.

Table 4: List of iVotronic DREs Tested by GAO

Serial number	Machine sequestered	Type of testing conducted
V0105178	No	Firmware testing
V0105203	No	Firmware testing
V0105222	Yes	Firmware testing
V0105255	No	Firmware testing
V0105305	No	Firmware testing
V0105351	No	Firmware testing
V0105379	Yes	Firmware testing
V0105390	Yes	Firmware testing
V0105396	No	Firmware testing
V0105422	Yes	Firmware testing
V0105481	No	Firmware testing
V0105499	No	Firmware testing
V0105500	Yes	Firmware testing
V0105524	No	Firmware testing
V0105526	Yes	Firmware testing
V0105563	No	Firmware testing
V0105573	No	Firmware testing
V0105607	No	Firmware testing
V0105613	Yes	Firmware testing
V0105623	Yes	Firmware testing
V0105651	No	Firmware testing
V0105656	No	Firmware testing
V0105661	Yes	Firmware testing
V0105664	Yes	Firmware testing
V0105743	No	Firmware testing
V0105848	No	Firmware testing
V0105873	Yes	Firmware testing
V0105874	No	Firmware testing
V0105894	Yes	Firmware testing
V0105903	Yes	Firmware testing
V0105906	Yes	Firmware testing

Appendix II: List of Machines Tested by GAO

Serial number	Machine sequestered	Type of testing conducted
V0105923	Yes	Firmware testing
V0105964	Yes	Firmware testing
V0105971	Yes	Firmware testing
V0105992	Yes	Firmware testing
V0106001	Yes	Firmware testing
V0106016	No	Firmware testing
V0106024	Yes	Firmware testing
V0106025	Yes	Firmware testing
V0106034	No	Firmware testing
V0106064	No	Firmware testing
V0106068	No	Firmware testing
V0106069	Yes	Firmware testing
V0106084	No	Firmware testing
V0106087	Yes	Firmware testing
V0106126	No	Firmware testing
V0106156	No	Firmware testing
V0106191	Yes	Firmware testing
V0106203	Yes	Firmware testing
V0106254	Yes	Firmware testing
V0106264	Yes	Firmware testing
V0106265	No	Firmware testing
V0106274	No	Firmware testing
V0106282	No	Firmware testing
V0106343	No	Firmware testing
V0106368	No	Firmware testing
V0106377	No	Firmware testing
V0106396	Yes	Firmware testing
V0106445	No	Firmware testing
V0106461	No	Firmware testing
V0106475	Yes	Firmware testing
V0106478	Yes	Firmware testing
V0106486	No	Firmware testing
V0106507	No	Firmware testing
V0106522	Yes	Firmware testing
V0106525	Yes	Firmware testing
V0106531	No	Firmware testing

Appendix II: List of Machines Tested by GAO

Serial number	Machine sequestered	Type of testing conducted
V0106552	No	Firmware testing
V0106585	No	Firmware testing
V0106586	No	Firmware testing
V0106588	No	Firmware testing
V0106602	No	Firmware testing
V0106615	Yes	Firmware testing
V0106656	Yes	Firmware testing
V0106658	Yes	Firmware testing
V0106661	No	Firmware testing
V0106667	Yes	Firmware testing
V0106681	No	Firmware testing
V0106711	Yes	Firmware testing
V0106718	Yes	Firmware testing
V0106740	No	Firmware testing
V0106744	No	Firmware testing
V0106833	Yes	Firmware testing
V0106840	Yes	Firmware testing
V0106864	No	Firmware testing
V0106865	Yes	Firmware testing
V0106878	Yes	Firmware testing
V0106881	Yes	Firmware testing
V0106883	No	Firmware testing
V0106907	No	Firmware testing
V0106933	Yes	Firmware testing
V0106936	Yes	Firmware testing
V0106949	Yes	Firmware testing
V0106965	Yes	Firmware testing
V0107000	No	Firmware testing
V0107011	No	Firmware testing
V0107020	No	Firmware testing
V0107042	Yes	Firmware testing
V0107045	No	Firmware testing
V0107053	Yes	Firmware testing
V0107077	Yes	Firmware testing
V0107082	No	Firmware testing
V0107094	Yes	Firmware testing

Appendix II: List of Machines Tested by GAO

Serial number	Machine sequestered	Type of testing conducted
V0107108	Yes	Firmware testing
V0107138	Yes	Firmware testing
V0107143	No	Firmware testing
V0107147	Yes	Firmware testing
V0110355	Yes	Firmware testing
V0111064	No	Firmware testing
V0113816	No	Firmware testing
V0114087	Yes	Firmware testing
V0114415	Yes	Firmware testing
V0117658	No	Firmware testing
V0118183	No	Firmware testing
V0118293	Yes	Firmware testing
V0105386	Yes	Early voting ballot testing
V0105266	Yes	Election day ballot testing
V0105694	No	Election day ballot testing
V0106082	Yes	Election day ballot testing
V0106145	Yes	Election day ballot testing
V0106247	Yes	Election day ballot testing
V0106509	No	Election day ballot testing and calibration testing
V0108671	Yes	Election day ballot testing
V0117861	No	Election day ballot testing and calibration testing
V0117951	No	Election day ballot testing

Source: GAO.

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www.essvote.com

August 15, 2006

Dear FL Users:

It has come to our attention after a number of inquiries from several of our iVotronic 12 inch screen users that some of your screens are exhibiting slow response times. After receiving some of these terminals in our Omaha, NE facility we were able to replicate a slow response during our testing.

After further analysis of the issue it has been determined that touchscreens on units with previous versions of firmware did not exhibit this condition. Therefore, our Engineering and Development Teams reviewed the differences in firmware code for versions 8.0.1.2 and 7.4.5.0 to establish the possible cause of this condition.

We have determined that the delayed response time is a result of a smoothing filter that was added to iVotronic firmware versions 8.x and higher. This smoothing filter waits for a series of consistent touchscreen reads before a candidate name is highlighted on the ballot. In some cases, the time lapse on these consistent reads is beyond the normal time a voter would expect to have their selection highlighted. This delayed response to touch may vary from terminal to terminal and also may not occur every single time a terminal is used.

The improvement will require an update to the firmware, and state-level certification. We have already taken steps to make the necessary changes to the firmware. Our plans are to certify this in the state of Florida in time for use for the November, 2006 General Election. This firmware upgrade would not involve any Unity software changes or upgrades to any other component of your voting system. This firmware change is only necessary for the 12" size iVotronic screens.

In order to avoid any potential issues at the polls on September 5th, it is our recommendation that you train your poll workers and voters to expect this slightly delayed response time for their highlighted selections. We have included with this mailing a sample voting booth instruction sign for your review and use.

It is important to note that this delayed response time in no way affects the integrity or reliability of the iVotronic voting system. All votes will be recorded securely and accurately as they always have been. No other functionality within the iVotronic system is compromised or affected by this issue.

RECEIVED
SUPERVISOR OF ELECTIONS
LEON COUNTY, FLORIDA
2006 AUG 21 A 10:01

It is our goal and focus at ES&S to provide secure, accurate and reliable voting systems to all of our clients worldwide. On behalf of ES&S, I can assure you that we are working with the Florida Division of Elections to rectify this situation and to prevent it from being an issue in all other future elections.

We will keep you posted on our developments as we work through the necessary phases of implementing this firmware in our 12" iVotronic screen counties in Florida.

Thank you for continued support.

Sincerely,

Linda Bennett
Regional Account Manager

Cc: David R. Drury, Chief, Bureau of Voting Systems Certification

Sarasota Herald-Tribune (Florida)

November 8, 2006 Wednesday
SARASOTA EDITION**DEMOCRATS SEIZE HOUSE; CRIST IN; BUCHANAN LEADS;
Slim 368-vote margin will trigger a recount for the
13th District****BYLINE:** By JEREMY WALLACE H-T POLITICAL WRITER**SECTION:** A SECTION; Pg. A1**LENGTH:** 1105 words

Republican Vern Buchanan was clinging to a 368-vote edge over Democrat Christine Jennings for the 13th Congressional District early this morning.

Although Buchanan declared victory just before 1 a.m., the razor-thin margin kept Jennings from conceding defeat and will generate an automatic recount.

"It's been a long night," Buchanan told diehard supporters gathered at the Sarasota Hyatt. "We got official notice. We won."

The results were loaded with controversy as nearly 13 percent of all ballots cast in Sarasota didn't include a choice for Congress. That difference, and scattered reports of difficulty finding the race on Sarasota's touch-screen ballots, raised concerns about undervotes in the race.

Supervisor of Elections Kathy Dent couldn't explain why 8,000 to 10,000 fewer people voted in the congressional race than in other high-profile races for governor, attorney general or U.S. Senate. But she said nothing mechanical went wrong with the county's \$4.7 million touch-screen voting machine system.

"Could it be that both candidates are from Sarasota -- I don't know," Dent said. "I don't have a clue. We had a real heated race in the primary, and I think it turned people off."

Throughout the day voters complained that touch-screen voting machines were not registering votes for Jennings properly. Jennings' campaign held a midday press conference to warn the problem was widespread.

At about 11:30 p.m. with the results still in great doubt, Jennings address supporters at a reception at Michael's on East in Sarasota.

"Right now, the most important thing, and I think that my opponent would agree, is to make sure that the rights of Florida voters are protected and that every vote is counted," she said.

It's a strikingly similar comment to those made during the controversial presidential election in 2000 when President George W. Bush won Florida by less than 600 votes after weeks of legal battles and recounts.

Already Democrats were calling in lawyers from the Democratic National Committee to weigh in on the potential voting issues.

"I hope it isn't the second coming of the butterfly ballot," Kendall Coffey, attorney for the Jennings campaign.

Susan McManus, a political science professor at University of South Florida, said the difference more likely resulted from people frustrated with the contentious campaign.

"You can see first-hand the results of an extremely negative campaign. People said, 'I can't vote for either one of them.'"

In Sarasota County, with all but one precinct reporting, 87,797 people voted for Bill Nelson, Katherine Harris or another candidate for U.S. Senate. In the governor race between Charlie Crist and Jim Davis, 87,678 county resident voted.

Only 76,549 voted for Jennings or Buchanan. In comparison, about 3,000 more people voted in the Sarasota Public Hospital Board election.

But a similar undervote was not recorded in other counties that voted in the District 13 race. In DeSoto County, only about 70 fewer votes were cast in the House race as the governor's race. That represents a 1.1 percent undervote. In Manatee County -- where not all voters even get to vote in the House race -- the undervote for the Jennings-Buchanan race was less than 6 percent, half that of Sarasota County, which registered a nearly 11 percent undervote when compared to the governor's race.

If Buchanan's victory holds, he will have survived a Democratic wave that turned two other Republican held seats in south Florida to Democratic control. The 13th Congressional District had emerged as one of the most watched races in the nation.

Buchanan used that idea over the last days of the campaign to warn voters that picking Jennings was akin to putting liberal Democrats in control of Congress.

At the beginning of the year few political pros predicted even one Republican seat in Florida having any national significance.

But because of a rough primary in the 13th Congressional District, the shocking scandal in the 16th and a strong showing in the 22nd, Florida -- and South Florida became one of the most fought over political territories in the nation.

Arguably only Pennsylvania and Ohio have tighter races than Florida.

President George W. Bush, former President Bill Clinton, first Lady Laura Bush, former Democratic presidential candidate John Kerry and former New York City Mayor Rudy Giuliani are among the parade of political stars who made it to South Florida hoping to tip the scales to their party.

"What looked to be a relatively uninteresting year in Florida politics has turned out to be one of the most interesting in the nation," said Larry Sabato, director of the Center for Politics at the University of Virginia.

The close battle in the 13th led to fierce campaigning, buttressed by a slew of negative campaign mail, TV ads, and radio spots in which Buchanan tried to peg Jennings as a liberal. Jennings tried to label Buchanan a corrupt businessman, continually question his business background.

Despite key difference on big issues, the two candidates rarely debated during their eight week campaign. Instead they relied on money to get their messages out.

In all, \$11.4 million was spent or available to be spent on what became one of the most expensive races in House history, falling just shy of the \$11.6 million record.

In a district where Republicans make up 45.3 percent of voters, Democrats make up 32.3 percent and voters unaffiliated with either major party are 22.4 percent, courting the other side was most important for Jennings, whose campaign featured a TV ad with prominent Republicans saying they would vote for her.

Even before the results began trickling in, Jennings campaign staff was raising questions about Sarasota's electronic voting machines. The campaign said more than 30 people complained Tuesday that their initial votes for her weren't recorded.

Add to that the dozen or so complaints the Jennings camp says it received during early voting and her supporters are worried there might be hundreds of voters who intend to vote but a computer glitch seems to be preventing it.

Staff writers Todd Ruger, Carol E. Lee, Doug Sword and Dave Gulliver contributed to this report.

U.S. House, District 13

Jennings (D) 118,737 50%

Buchanan (R) 119,105 50%

(327 of 327 reporting)

Charlotte County

Jennings (D) 4,265 49%

Buchanan (R) 4,452 51%

(8 of 8 reporting)

DeSoto County

Jennings (D) 3,057 47%

Buchanan (R) 3,465 53%

(15 of 15 reporting)

Hardee County

Jennings (D) 1,687 39%

Buchanan (R) 2,627 61%

(12 of 12 reporting)

Manatee County

Jennings (D) 44,361 47%

Buchanan (R) 50,027 53%

(135 of 135 reporting)

Sarasota County

Jennings (D) 65,367 53%

Buchanan (R) 58,534 47%

(157 of 157 reporting)

LOAD-DATE: November 9, 2006

LANGUAGE: ENGLISH

NOTES: 2006 GENERAL ELECTION RESULTS 13TH DISTRICT CONGRESS

GRAPHIC: PHOTO 3 MAP

STAFF PHOTO/ROB MATTSON/ rob.mattson@heraldtribune.com Vern Buchanan celebrates an unofficial 1 a.m. victory at the Sarasota Hyatt. An uncounted 53,000 votes dealys results in the race. STAFF PHOTO / NINA GREIPEL / nina.greipel@heraldtribune.com Ignoring the rain, GOP candidate Vern Buchanan waves at passing traffic at the corner of Bee Ridge and Beneva roads in Sarasota on Tuesday as supporter John Colon holds an umbrella. STAFF PHOTO / THOMAS BENDER / thomas.bender@heraldtribune.com Democratic House candidate Christine Jennings talks with Roz Goldberg of Longboat Key at her Election Day party at Michael's on East in Sarasota on Tuesday evening. (MAP OF) CONGRESSIONAL DISTRICT 13

PUBLICATION-TYPE: Newspaper

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Sarasota Herald-Tribune (Florida)

November 9, 2006 Thursday
ALL EDITION**Dist. 13 voting analysis shows broad problem;
Sarasota County vote review indicates 13% undercount****BYLINE:** By BOB MAHLBURG and MAURICE TAMMAN STAFF WRITERS**SECTION:** A SECTION; Pg. A1**LENGTH:** 963 words**DATELINE:** SARASOTA COUNTY

A review of Sarasota County voting results shows that in almost every precinct a high percentage of voters didn't cast ballots in the hotly contested 13th Congressional District, a trend that likely affected the outcome of the race.

Democrat Christine Jennings lost to Republican Vern Buchanan by 368 votes, making it the second closest congressional race in the country.

More than 18,000 voters who showed up at the polls voted in other races but not the Buchanan-Jennings race.

That means nearly 13 percent of voters did not vote for either candidate -- a massive undercount compared with other counties, including Manatee, which reported a 2 percent undervote.

If the missing votes had broken for Jennings by the same percentage as the counted votes in Sarasota County, the Democrat would have won the race by about 600 votes instead of losing by 368, according to a Herald-Tribune review. Even if the undervote had been 8 percent -- more than three times what it was in Manatee -- Jennings would have won by one vote.

While some have speculated that people simply chose not to vote in the District 13 race, many voters say the unusual undervote was caused by badly designed touch-screen ballots, which they say hid the race or made it hard to verify if they had cast their vote.

More than 120 Sarasota County voters contacted the Herald-Tribune to report such problems, almost all regarding the Jennings-Buchanan race.

At a press conference Wednesday, Supervisor of Elections Kathy Dent said she did not know specifically what caused the undervote.

"I do not know what to attribute it completely to. It's not a mechanical issue; it would be voters overlooking the race. We did not have any equipment failure," Dent said. "I'm not a mind reader. I can only give you conjecture."

But prior to the election, Dent had sent notices to her poll workers to warn

voters that the District 13 race was easy to miss as they scrolled through their touch-screens to vote.

Dent declined repeated requests for Wednesday for interviews.

A review of precinct-by-precinct voting results in Sarasota County shows that voting problems were widespread and cut across party lines. Virtually every precinct had relatively high undervotes. Among the worst was La Casa Mobile Home Park, a retirement park for seniors where 30 percent of people who showed up at the polls did not have a vote recorded in the Buchanan-Jennings race.

Meanwhile, the estimated undervote in DeSoto County was 1 percent based on the number of people who voted in the governor's race versus the District 13 race. In Hardee County, the undervote was roughly 5 percent.

The review of Sarasota County results showed high numbers of undervotes occurred in precincts regardless of whether Jennings or Buchanan was the preferred candidate.

Although some blame the undervote on anger at the mudslinging in the race and general dislike of Buchanan by some other Republicans, that seems unlikely given that the undervote was not repeated in other counties and was not heavier in strong Republican precincts. In fact, in precincts that went for newly-elected Gov. Charlie Crist, the number of undervotes was slightly less than in precincts that went for his Democratic challenger.

In addition, absentee voters, who didn't have to use the voting machines, had only an estimated 1.8 percent undervote.

Aubrey Jewett, a University of Central Florida political scientist who specializes in Florida and congressional politics, said he finds it hard to believe so many voters would intentionally refuse to vote in the high-profile race but then cast ballots for little known races such as hospital board. The hospital board race in Sarasota had more votes than the District 13 race.

"It's possible people just declined to vote, but it doesn't seem likely to me," Jewett said. "It's certainly a very unusual situation."

The big gap in voting for the Buchanan-Jennings race could also stem from defective voting equipment or problems with the way the ballot was displayed, Jewett said.

State officials downplayed the possibility of problems with the ballot, machines or other issues.

"I'm not sure there's even a problem," said Jenny Nash, a spokeswoman for the Florida Secretary of State, who oversees elections. She said the office had not received a single complaint or contact about the race.

Nash repeated Dent's suggestion that voters may have intentionally decided not to vote in the congressional race.

"It could be a protest vote. There's a lot of different reasons people undervote," she said. "Certainly undervoting is the voter's prerogative."

Nash said no state investigation is planned.

State Rep. Nancy Detert, R-Venice, who was a candidate in the Republican primary for the congressional seat, said she thought many voters may have decided "to send

a message" about negative campaign ads by not voting in the race.

"I talked to a lot of people who, because of the negative campaigning, said they wouldn't vote for either candidate," Detert said.

Former Sarasota Republican Party Chairman Tramm Hudson, who also was a candidate in the race until he was knocked out in the primary, said he heard from a number of voters who told him "they were going to have to hold their nose on whether to vote for the Republican or Democrat."

But Hudson was skeptical that so many voters in Sarasota County would go to the polls and then not vote for the congressional race.

"It's a pretty dramatic number," Hudson said. "I believe you have to compare it to Manatee, Charlotte and DeSoto counties. They're in the same (congressional) district. They saw the same ads and got the same mail."

THE UNDERVOTE

Comparison of undervote in the District 13 race:

SARASOTA

142,283

Total votes cast

18,382

Undervote

12.92%

Difference

MANATEE

96,705

Total votes cast

2,312

Undervote

2.39%

Difference

LOAD-DATE: November 10, 2006

LANGUAGE: ENGLISH

GRAPHIC: PHOTO 3

(Vern)Buchanan (Christine) Jennings STAFF PHOTO / DAN WAGNER / dan.wagner@heraldtribune.com Christine Jennings leaves a press conference Wednesday. If the missing votes had been cast similar to Sarasota's counted votes, Jennings could have won.

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Sarasota Herald-Tribune (Florida)

November 15, 2006 Wednesday
SARASOTA EDITION

Stage 2: Manual recount to begin;
After two-day computer recount, Buchanan's lead
increases from 368 to 395.

BYLINE: By DOUG SWORD, PAUL QUINLAN and TODD RUGER STAFF WRITERS

SECTION: A SECTION; Pg. A1

LENGTH: 1371 words

Republican Vern Buchanan's lead increased slightly at the end of a two-day, computer-generated recount of the 13th Congressional District race.

On election night, Buchanan led Democrat Christine Jennings by 368 votes. His lead rose to an unofficial 395 votes Tuesday after the retabulation from the five-county district, as well as a partial count of provisional ballots. Altogether, Buchanan picked up 72 votes while Jennings gained 45.

The recount, though, doesn't address the most inflammatory issue of the election dispute: Why were more than 18,000 ballots left blank on the congressional race, and did it involve voter error or problems with the system?

Because the margin remains within .25 percent, elections officials must now begin a manual recount of more than 237,000 ballots. The counties have four days to complete the manual recount. That will be a simple, though possibly disputed, process in Sarasota County, where voters don't cast paper ballots, and the same result is expected on the second recount.

It will be more labor intensive in Manatee and other counties where canvassers must review paper ballots for stray marks, overvotes and improperly filled in ovals.

"It's been a long, long two days," said Kathy Dent, Sarasota County's supervisor of elections. "It's been a long, long two weeks."

The Jennings campaign did win a victory Tuesday. Circuit Court Judge Deno Economou granted a 48-hour injunction that will delay a planned state audit of election equipment by a day.

The state Division of Elections had planned to begin running tests on voting machines this afternoon, but the decision delays the state efforts until Thursday.

Neither the elections division, the Buchanan campaign, nor Dent's office objected to the delay, or to a Jennings' campaign request to preserve voting machines and other electronic equipment pending independent audits by the candidates' experts.

Since both the state and independent audits require the use of machines that weren't used in the election and there are only 24 of those, Jennings' attorney Jeff Iiggio was concerned there would not be enough machines to conduct all the tests.

"We don't object to any testing," said Buchanan spokeswoman Sally Tibbetts. "It will again verify that Vern Buchanan won."

Meanwhile, in Washington, D.C., Buchanan and Jennings both continued to stake out their turf Tuesday during the second of three days of orientation for new congressional members.

Behind in the race, Jennings seemed to be on the outside looking in as the political landscape in Washington is reformed.

While she learned how to vote, she wasn't invited to a 5 p.m. reception at the White House on Monday. She had her photo taken with the 52 other new faces of the 110th Congress, but she may not be given a vote Thursday when Democrats pick a new House speaker.

"That's OK. It really is," Jennings said. "It's not a problem."

It is unclear whether Jennings will vote in Thursday's Democratic leadership elections. Jennings and other Democrats suggested she would, though Jennings was still awaiting confirmation late Tuesday, according to her campaign spokeswoman. "I certainly intend to vote," Jennings said.

"It feels a little bit awkward for us and for everyone because there are two people here, and it's kind of unusual," Jennings said, after stepping out of a four-hour session at the Canon House Office Building, just across the street from the Capitol. "But I'm handling it fine. As I said, I truly expect to be the congresswoman for the district."

White House spokesman Blair Jones said those attending the orientation received invitations to Monday's reception.

Questioned on whether Jennings was invited, Jones repeated that it was "our understanding that our invitation was included in all orientation attendee packets ..."

Buchanan met with some potential staffers Tuesday, another sign he is proceeding under the assumption that the election won't be overturned.

In Tallahassee, the current governor and his successor said Tuesday they were waiting on the audit and investigations before wading too deep into the controversy.

Asked if it was time to reconsider using electronic voting machines, Republican governor-elect Charlie Crist said, "I don't know. Let's monitor what's happening in Sarasota and let the secretary of state do some great work down there."

Gov. Jeb Bush, with less than 50 days left in office, said, "We'll get to the bottom of it. If there's any kind of irregularities, they will be determined during a thoughtful review."

Bush defended the touch-screen voting machines, saying "they work pretty well." But he added that he'd pushed for statewide use of optical scanning.

At issue remains a 13 percent undervote in Sarasota County, the difference between total votes cast and those registered for the 13th District race. Sarasota is the only county in the district won by Jennings, and she and other Democrats say that problems with the county's voting machine negated thousands of votes that would have given her the election.

Some Democrats expect that Democrats could look to the courts for help if the recounts do not reverse the outcome. Buchanan and other Republicans concede that the undervote was unusual, but that it could have been caused by any number of factors, none of which legitimately change the result.

The machine recount, automatic in close elections, was considered something of a formality, and wasn't expected to make a major difference in the tally. However, there are still about 250 provisional and military ballots to be counted before the end of the week, and manual recounts in Manatee, Hardee and DeSoto could yield changes.

In Manatee County, election officials expect to begin their work this afternoon. All 96,000 ballots won't be manually recounted, only the 2,300 that were deemed questionable on Tuesday.

Officials will set up two tables, where Manatee County Supervisor of Elections Bob Sweat and his deputy elections supervisor will sit alongside representatives from both campaigns and both parties. That is five people at each table. What they are trying to do, Sweat said, is figure out whether ballots that are improperly marked should be counted.

"We need to figure out the voter's intent," he said. "That's the key to this thing."

In a preview of what could happen in a manual recount, Hardee County's canvassing board ruled Tuesday on the validity of two ballots that weren't recognized by the ballot-scanning machines in the original count because they were improperly marked.

The ballots were discovered and set aside by election workers Monday.

Under Florida's election law, in instances where ballots are improperly marked the canvassing board must make a determination about the voter's intent.

After hearing arguments from representatives for both candidates, the board determined that one ballot would count for Jennings and the other would not.

In the first case, Jennings' party affiliation was blacked out instead of the oval next to her name and the voter used the same method throughout the ballot.

In the second case, Jennings' party affiliation was circled, but the canvassing board ruled that because the voter had used check marks and other symbols in other races on the ballot the intent was not clear.

Representatives for both candidates lobbied the canvassing board members as if they were in court, citing election law as they stood side by side in a doorway outside the counting room.

Staff writers Joe Follick, Anthony Cormier and Zac Anderson contributed to this report.

THE LATEST TOTALS

New vote counts and changes since Nov. 7

Charlotte County

Buchanan 4,460

Jennings 4,275

+2 for Jennings

DeSoto County

Buchanan 3,466

Jennings 3,053

+5 for Buchanan

Hardee County

Buchanan 2,628

Jennings 1,684

+4 for Buchanan

Manatee County

Buchanan 50,088

Jennings 44,404

+18 for Buchanan

Sarasota County

Buchanan 58,535

Jennings 65,366

+2 for Buchanan

Total

Buchanan 119,177

Jennings 118,782

+27 for Buchanan

Note: Figures include provisional ballots for Manatee, Charlotte and Hardee counties. The 164 provisional ballots from Sarasota and DeSoto counties have not yet been tallied. Some overseas ballots are still trickling in. Overseas ballots must be received by the Supervisor of Elections offices by 5 p.m. Friday to be counted.

LOAD-DATE: November 16, 2006

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Sarasota Herald-Tribune (Florida)

November 18, 2006 Saturday
ALL EDITION

Buchanan wins recount; legal action looms;
Jennings might challenge her 369-vote loss after a
significant undervote in Sarasota County.

BYLINE: By JEREMY WALLACE H-T POLITICAL WRITER

SECTION: A SECTION; Pg. A1

LENGTH: 774 words

The recount in the 13th Congressional District came to an end on Friday, but unanswered questions about an abnormally high undervote continued, setting the stage for an anticipated legal battle that could start early next week.

The recount and final tabulations of the military and overseas ballots show that while Democrat Christine Jennings trimmed Republican Vern Buchanan's lead, Buchanan still had a narrow 369-vote edge.

"These are the official results," said Sarasota County Supervisor of Elections Kathy Dent, a Republican. "Our job is done."

On Monday, the Florida Division of Elections is scheduled to make the Buchanan victory official when it certifies the results from Sarasota, Manatee, Charlotte, DeSoto and Hardee counties. The Jennings campaign would then have 10 days to challenge the results.

Jennings' attorney, Kendall Coffey, said no decision has been made on whether to proceed with a court challenge. But he did pan the recount process for its failure to show why 18,000 Sarasota County voters didn't have a vote registered in the congressional battle. While less than 5 percent of voters in the other four counties that make up the 13th District skipped the race, almost 13 percent did so in Sarasota.

"The recount was an important step in this election process, but ultimately it was an exercise that revealed nothing and did nothing to provide a real explanation for what went wrong with Sarasota County's voting system," Coffey said.

Democrats suspect the touch-screen voting machines used in Sarasota County didn't properly record votes due to a computer glitch or a poorly designed ballot. Republicans generally argue that voters were turned off by negative advertising in the campaign and refused to vote for either candidate.

Buchanan's campaign said Jennings' campaign has been clearly laying the groundwork for a court challenge for weeks, including collecting eyewitness testimony from voters who say they had trouble registering their votes.

"Based on what they have said and done, we think it will go to the courts," said

Sally Tibbetts, spokeswoman for Buchanan's campaign.

Although the state Division of Elections is expected to audit the voting process in Sarasota County beginning next week, it isn't expected to produce results within the 10-day window the Jennings campaign would have to challenge the results.

If Jennings' campaign goes to court, they would likely push for a revote. Coffey said that judges have allowed for new elections in disputed mayoral elections in Miami, so there is precedent in Florida to have such a do-over.

Key to Jennings' campaign would be to show that voters not only had votes disappear but that a number of people actually watched votes for Jennings appear to turn into Buchanan votes.

"The problem that has consistently arisen is that when a voter makes a selection for Ms. Jennings on the electronic voting equipment, her opponent's name is either immediately highlighted, or appears incorrectly as the choice in the machine summary," Coffey wrote to Dent.

"In one notable instance at the Gulf Gate Library precinct, a married couple each independently had the same problem on machines at that site -- they selected Christine Jennings and her opponent's name appeared highlighted instead. ... There are multiple other complaints from that site as well as from other early voting locations."

Records show that as early as Nov. 2, Coffey wrote Dent to complain that five of seven early voting sites were reporting problems voting on the District 13 race and asking for special attention to voting machines, extra staffing and warnings to voters.

Buchanan and Jennings were both expected back in Sarasota this weekend, after spending most of the past week in Washington going through orientation for new members of Congress. Although the winner has yet to be resolved, Congress allowed both members to go through the program, and both were included in the freshman class photo for the newly elected members.

The 13th District isn't the only race that still has yet to produce a winner. Ballots are still being looked at in four other races: two in Ohio, and one each in New Mexico and North Carolina. Two other races -- one in Texas and one in Louisiana -- are set to have runoff elections in December.

The winner of the Buchanan-Jennings race won't affect control of Congress. Democrats currently hold 231 seats; Republicans hold 197.

Buchanan has scheduled a 1 p.m. Monday press conference, his first with local media since election night.

Staff writers Todd Ruger and Bob Mahlburg contributed to this report. Jeremy Wallace can be reached at 361-4966 or jeremy.wallace@heraldtribune.com.

LOAD-DATE: November 19, 2006

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NOTES: 2006 ELECTION

GRAPHIC: PHOTO 4

"Our job is done," Kathy Dent, Sarasota County supervisor of elections, says. Vern Buchanan's campaign says it expects his opponent to mount a court challenge.

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Christine Jennings' staff says no decision has been made on whether to go to court.
Kendall Coffey, Christine Jennings' attorney

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WEDNESDAY, NOVEMBER 29, 2006

2006 ELECTION: THE AUDIT

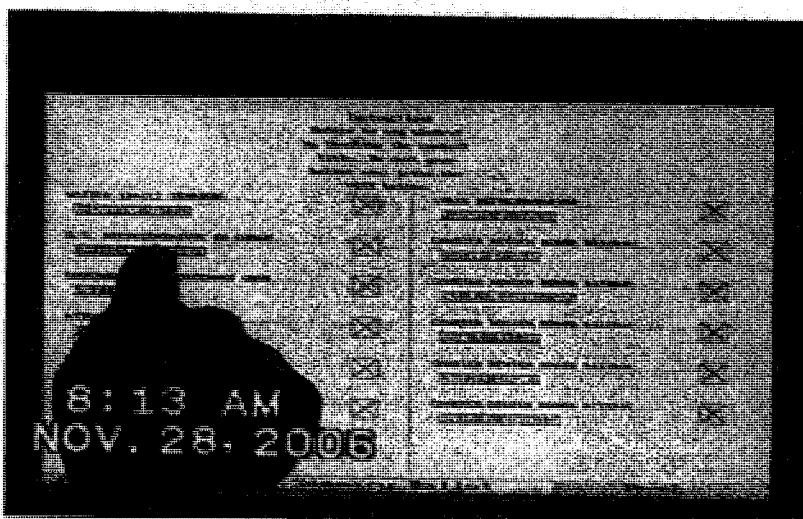
ON DAY 1 OF VOTE TEST, NUMBERS DON'T ADD UP

Human or machine error?

Officials say discrepancies are likely due to human error, will look for answers today.

Jennings camp finds results 'intriguing'

'This does not reduce the significant concerns,' a campaign spokesperson says.



Auditors vote during a 12-hour test on Tuesday, the first day of a state audit of Sarasota County's touch-screen voting machines. The audit was prompted by the disputed congressional race in the 13th District between Vern Buchanan and Christine Jennings.

By CAROL E. LEE
carol.lee@heraldtribune.com

SARASOTA COUNTY — An audit of the county's touch-screen voting machines Tuesday found several discrepancies, most prominently in the disputed 13th Congressional District race, but state elections officials said it is unclear whether the problems were the result of human or machine error.

All four voting machines that officials used to simulate the Nov. 7 election had miscounts, and three of them had miscounts in the District 13 race.

Republican Vern Buchanan was certified the winner last week over Democrat Christine Jennings by 369 votes.

But there were more than 18,000 undervotes in the race, prompting a recount and now a state audit.

The voting machines tested Tuesday were among those that the state programmed for



Attorneys for Democrat Christine Jennings, including Leonard Shambon, right, watch a set of TV screens projecting the actions of auditors re-creating Election Day in Sarasota County.

the county, but were not used in the Nov. 7 election.

State officials selected four precincts, and had their workers vote to reflect proportionately how votes were cast in

the actual election.

Of the 251 ballots cast, five additional votes were counted for Jennings, including three

PLEASE SEE AUDIT ON 13A

UPDATE

WHAT'S NEW: State elections officials auditing Sarasota County's touch-screen voting machines found discrepancies in all four machines tested.

THE STORY SO FAR: The audit was prompted by more than 18,000 undervotes in the District 13 Congressional race between Democrat Christine Jennings and Republican Vern Buchanan. Buchanan was certified the winner by 369 votes.

WHAT'S NEXT: State officials will review Tuesday's test vote, including videotapes of it, to try to determine what caused the miscounts.

INSIDE

Sarasota County moves to scrap its \$4.5 million touch-screen voting system. Page 1B

FOR UPDATES TODAY

Tune into SNW-News 6 or go to heraktribune.com for late-breaking developments.

Machine audit finds discrepancies

AUDIT FROM 1A

extra votes in one precinct. There were also miscounts in five other races.

"Most likely it's human error," said Jenny Nash, spokesperson for the State Division of Elections.

Representatives for both Jennings and Buchanan said Tuesday's results support their original contentions.

"They said beforehand in all likelihood there would be human error," said Buchanan lawyer Hayden Dempsey.

Jennings spokeswoman Kathy Vermazen said she found the results "intriguing."

"This does not reduce the significant concerns that the campaign has had and the voters have had," she said.

Election officials and observers have cited several possible reasons for the unusually large undervote in the race, including an intentional decision by voters not to cast a vote, a glitch in the software and poor ballot design.

The potential for problems with the touch-screen ballot design prompted Sarasota County Supervisor of Elections Kathy Dent to send an e-mail to precinct clerks before Election Day instructing them to tell voters not to miss the District 13 race.

State officials said Tuesday's errors could be the result of a faulty script or mistakes on the part of the voters — who were Division of Elections employees.

This morning state audit officials will begin trying to figure out what went wrong before Friday's simulated election, which will test machines that were used on Nov. 7.

They will review the scripts and look at video tapes of voters casting ballots on each machine, said the Division of Elections' Nash.

State officials, who tallied the votes Tuesday by printing each machine's results tape and measured the totals against those the machines they were mimicking had tabulated on election day, did not mention the possibility that the problem was in the machines.

Dent, who requested the state audit, was more than 100 miles away from the process Tuesday.

At an Orlando meeting of the Florida State Association of Supervisors of Elections, of which she is president-elect, Dent said she did not think Tuesday's results are significant.

"I would expect that," she said, adding that voting discrepancies have cropped up when her office has run test scripts before elections. "There are human people putting in the votes."

David Drury, the bureau chief at the Division of Elections Voting Systems Certification, created a test script using logs from machines that were used on election day to generate the ballots, Nash said.

Four of the machines were set up to mirror the ballots in precincts 76, 105, 113 and 118.

The ballots were loaded onto the machines once the test precincts were selected.

Buchanan had the state randomly choose precincts 76 and 113 in Sarasota, both of which experienced about a 15 percent undervote rate in the District 13 race.

Jennings selected precinct 105 in North Port, which reported a 28 percent rate, and 118 in North Port, which had the highest number of undervotes at nearly 30 percent.

On a fifth machine, officials tested some of the scenarios voters who claimed to have trouble casting a ballot in the District 13 race said they encountered on Election Day.

It featured the ballot of precinct 117, which reported a 24 percent undervote rate.

Forty-five ballots were cast



ASSOCIATED PRESS / STEVE NESIUS

Florida Division of Elections employees test a Sarasota County touch-screen machine Tuesday. The test found some discrepancies which state officials plan to investigate.

on the machine Tuesday, with eight undervotes in the congressional contest.

The polls opened at 7 a.m. Tuesday.

The touch-screens hung in a row on a wall, a camera fixed behind each. Two state elections employees sat in front of each 12-inch machine.

One read a script, "Touch the Jennings race. Now change it to Buchanan. Hit review." Another made the selections.

The twelve "voters" rotated in and out in 20 minute shifts.

They cast ballots in ten different scenarios, two that resulted in votes for Buchanan, six for Jennings and two for an undervote.

After working through each ballot, voters looked over the review screen, recorded their selections on a sheet paper and waited for the next time their instructions told them to vote.

Outside the 25-by-15 voting room, lawyers, journalists, campaign officials and curious residents peered through two long

windows.

The voting action drew the occasional yawn and stretch of the torso in the mostly silent the warehouse.

Noise was mostly reserved for the occasional television reporter's dispatch and the intermittent "click" noise elicited when voters checked boxes.

A mid-afternoon jolt shot briefly through the still air Tuesday and hinted at the biting campaign that the candidates at the center of the audit had fought.

Jennings entered the warehouse at about 2:30 p.m. to observe the mechanics of voting.

"There's your race," said one of her lawyers, Sam Hirsch, to Jennings, who nodded.

"This could go on for months, and I'm prepared for that," she later told reporters. "I will never give up."

Not to be outshone, Buchanan's press secretary, Sally Tibbetts, dropped in to blanket the media with news releases as Jennings was wrapping up her hour at the audit.

Dent, whose conference was scheduled long before the Nov. 7 election and its contested results, said her competent staff rendered her presence in Sarasota unnecessary during the state-run audit.

Staff writer Todd Ruger contributed to this report.

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November 29, 2006

Peter Antonacci, Esq.
Allen C. Winsor, Esq.
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301 So. Bronough Street
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Tallahassee, FL 32301

Dear Mr. Antonacci:

We very much appreciate the courtesy that the Division of Elections staff exhibited to our campaign's representatives at the first phase of the parallel-testing portion of the State's audit of Sarasota County's electronic voting machines on Tuesday. The test, however, was infected by several serious errors that we would like to call to your attention, so that they can be cured before the second phase of the testing commences on Friday morning. Unless all of these defects are remedied, the validity of the State's audit, and the public's confidence in that audit, will be deeply undermined.

As you know, we have previously raised a broad range of issues about the entirety of the audit, including the parallel-testing portion. While those issues continue to concern us, this letter focuses on specific points crystallized by our observation of yesterday's parallel-testing exercise. As we all recognize, the purpose of parallel testing is to simulate Election Day conditions as closely as possible. In several specific respects, the test conducted yesterday did not do so as effectively as possible.

Unrepresentative "Mock Voters"

As our experts initially discussed with Mr. David Drury, the leader of the audit and the Chief of the Division's Bureau of Voting Systems Certification, nearly two weeks ago, on Wednesday, November 15, pretending that Division of Elections employees can serve as "representative" voters in a simulated election is simply wrong. Yesterday morning, Mr. Drury explained that all of the mock "voters" were "volunteers" recruited from the Election Division's Bureau of Election Records and Bureau of Voting Registration Services. This is unacceptable for at least four reasons.

First, each of the testers is employed by, and accountable to, the very state agency that appears to have certified a defective voting system. A clearer conflict of interest could hardly be imagined.

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Second, the testers, as full-time employees of the Division of Elections who spend upwards of 40 hours each week working to iron out problems in our electoral system, are all hyper-sensitized to the high-profile issue of touchscreen malfunction that has embroiled Florida and the Thirteenth District for the last three weeks. Therefore, consciously or unconsciously, they are inclined to try to cast their test ballots very carefully, especially when voting for the Representative in Congress. As you well know, a key to any experimental design involving human subjects is that the subjects not know in advance precisely what the test is designed to reveal. Indeed, in one of the most notorious software bugs ever found in an electronic voting system — the “sliding-finger bug” that California testers discovered last year in the Diebold TSx system — the bug was uncovered only because one voter had a tendency to very slightly drag her finger across the touchscreen, which in turn triggered a software bug that repeatedly caused a sizeable fraction of the machines to crash. The fact that the voter did not fully know what the machines were being tested for was critical to her maintaining a natural finger action that led to discovery of the bug.

Third, current state employees cannot adequately represent the Sarasota County electorate because by definition they include no retirees. As you know, Florida’s Thirteenth Congressional District generally, and Sarasota County in particular, contains a very significant senior population, including many voters who have passed the state retirement age.

Fourth, Mr. Drury explained that the state auditors did not try to ensure demographic balance, or representativeness, among the testers. Rather, they had merely “asked for volunteers” and apparently accepted whoever took up their offer.

A proper, scientifically valid test should include a much broader cross-selection of the population (including retirees and seniors), should exclude anyone employed by a state agency or by a corporation involved in election administration, and should not draw its testers from Sarasota County, where finding mock voters unfamiliar with the precise subject of these tests would likely be impossible.

Misplacement of the Touchscreens

On Election Day (and during early voting), the touchscreens were horizontal or nearly horizontal. But during Tuesday’s test, they were vertical. So the test failed to recreate the conditions that were experienced by actual voters on Election Day. Altering the screen angle is potentially a very significant alteration, as it largely, if not entirely, prevents a mock voter from simultaneously touching two parts of the screen and it greatly reduces the chance that the voter touches the screen at a point slightly off-center from his or her intended target spot.

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When, as in the real election, the screen is horizontal, the actual voter's wrist or watchband or bracelet or cuff or thumb or other hand is likely at some point to rest on the touchscreen while his or her finger is attempting to select a candidate or page through the ballot or press the "VOTE" button above the screen. Just as a computer is more likely to crash when several keys on a keyboard are simultaneously depressed (or when one inadvertently hits the keyboard and the mouse simultaneously), a touchscreen voting machine is most likely to go awry when the screen is being touched in more than one spot simultaneously.

Furthermore, when the screen is horizontal, a voter — especially one who is relatively short — is likely not to touch the screen precisely where intended because the screen is, effectively, sloped away from the voter. This is especially true for ballot lines near the top of the screen, such as the Thirteenth District congressional ballot line. By contrast, when the screen is hanging perfectly vertically, at roughly the height of the voter's shoulders and head, the voter touches the screen at a clean 90-degree angle and is much more likely to press precisely where intended, rather than outside of the response zone in the screen for recording a vote.

Yet another problem with yesterday's test is that, although one of the five machines was a machine set up for persons with disabilities (sometimes known as an "ADA machine"), it was never tested using the large-font option for persons with visual disabilities. That also needlessly rendered the test unrepresentative of actual Election Day activities.

Of course, there is no guarantee that correcting these flaws would trigger the machine malfunctions that Sarasota County voters witnessed on Election Day. But there is certainly no reason for auditors not to try to simulate actual Election Day conditions. Having the mock voters vote on horizontal or near-horizontal screens might require putting the video cameras on taller tripods; but otherwise, we see no logistical issues that would prevent Friday's test from using this more realistic simulation of actual Election Day conditions.

Mistakes in the Scripts and "Vote Patterns"

During Tuesday's test, the mock voters were instructed to follow "test scripts" that included several "vote patterns," which essentially are series of screen touches in which the mock voters move from screen to screen, either changing or verifying their selections. The vote patterns used on Tuesday were inadequate, for at least three reasons.

First, according to the audit plan that the Division posted on its Web site on Monday, the scripts included as many as 10 distinct patterns for changing or verifying mock voters' congressional ballots, but no scripted patterns for voters to change or verify their selections for other offices such as U.S. Senator, Governor, or other statewide, countywide, or local offices. To

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assume that voters used the summary screen and the “previous page” and “next page” commands to change or verify their selections for only one of the more than two dozen contests on the ballot is patently unrealistic. The “vote patterns” therefore should be applied, in reasonable numbers, to various contests on the ballot, including — but certainly not limited to — the congressional contest. Furthermore, applying the various vote patterns to different contests will help determine whether the machines were indeed more likely to malfunction when recording congressional votes than when recording votes for other offices on the ballot.

Second, as our experts explained to Mr. Drury at their November 15 meeting, the vote patterns — the movements back and forth between different screens to change or verify selections — should be executed at varying speeds. That was not done in Tuesday’s test. As anyone who regularly uses a computer well knows, the chance of a computer “freezing” or otherwise malfunctioning often is related to the speed at which one uses the keyboard and mouse. Slowly and methodically scrolling through each screen in a voting pattern, as the testers did yesterday, only renders the test less realistic and less likely to trigger the actual computer errors that the machines exhibited on Election Day. Likewise, the bizarrely long pauses that most of the test voters took after selecting all their candidates and before hitting the “VOTE” button — pauses that were caused by starting the vote-selection process too far in advance of the pre-established times for pressing the “VOTE” button — needlessly rendered yesterday’s test unrealistic, as well.

Third, it appears that the scripts themselves contained a blatant error. According to the plan the Division posted on its Web site on Monday, the test voters would undertake any of 10 different vote patterns (in the congressional race only). But due to what appears to be a typographical error, one of the intended patterns was omitted and replaced by a nonsensical pattern. In the posted audit plan, “Vote Pattern J-4” reads as follows (emphasis added):

- * Select Jennings the first time the race is presented to the voter.
- * Return to the race directly from the review screen after all other selections are made and change final selection to Jennings.
- * Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Obviously, if “Jennings” was selected initially (as indicated in the first bullet above), then it makes no sense (in the second bullet) to “change [the] final selection to Jennings.” The first line clearly contained an error: It should have read “Select Buchanan the first time the race is presented to the voter.” Although our expert Ms. Jocelyn Whitney called Mr. Drury’s attention to this error before the mock voting commenced at 7:00 a.m., we never received any assurance that the problem had been cleared up. Nor did we see any sign that the scripts had been corrected

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to remove this flaw, although it was impossible for our observer to read the scripts from any of the chairs reserved for the test observers. It was not until 2:02 p.m. that one of the testers finally said that she didn't understand the instructions and sought guidance. In short, it appears that the actual conduct of the test, at least until 2:02 p.m. on Tuesday (and perhaps beyond), was not even in compliance with the Division of Elections' own written plan. Obviously, if "Vote Pattern J-4" is to be used in Friday's test, this defect must first be remedied.

Machine Breakdown During the Test

During the test, it appeared that the iVotronic machine being taped by Camera #4 — the Precinct 113 machine, with serial number V0106866 — repeatedly malfunctioned. As far as we are aware, the problems commenced at about 12:18 and continued for some time thereafter, as the screen repeatedly exhibited an odd pattern of lines. Not too long before 2:00 in the afternoon, the auditors finally put a PEB into the machine and left it there for at least 15 minutes. Given the irregular nature of this "on the fly" fix, we would like the Division of Elections to explain what happened, why it was fixed through this particular method, and how (if at all) the problem and the attempted fix were recorded on a discrepancy log (again, we saw no such logs at any time during the test).

Inadequate Videotaping

As this letter is being written, we have not yet received DVDs of Tuesday's test. We therefore request that these be delivered to all interested parties, including all parties to the election contests that have been filed in state court in Tallahassee, as soon as possible — that is, in less than the previously announced 48 hours.

But we also are concerned by the failure to videotape the critically important activities immediately preceding yesterday's mock voting. On Friday, when the test will use iVotronic machines and PEBs (personalized electronic ballots) that actually were deployed on Election Day, it will be all the more important to capture on videotape the pre-mock-voting activity. Specifically, the videotape should memorialize the chain of custody for each machine, from the time that the seal on each machine is broken, through the entire setup process, right up to the moment when the testers begin casting the test votes. Only by documenting these early steps, as well as the mock voting itself, on videotape can the test win the public's confidence.

Inadequate Record-Keeping

Yesterday, as soon as the test voting was complete, the auditors used the PEBs to extract the total votes for each candidate and the total undervotes in each contest. In doing so, they

skipped over an essential step, which would be to immediately download from each individual machine the event logs and ballot-image logs for that day's test. Although these logs remain recoverable on subsequent days, to increase public confidence and to promptly provide the interested parties with all relevant data, these logs should be printed, machine by machine, immediately after the close of test voting — for example, on Friday evening. These logs would show, for example, how each voter's votes were ultimately recorded and whether the machines had been "recalibrated" between the actual election and the mock election. Needless to say, "recalibrating" any of the Election Day machines would make a mockery out of any otherwise valid testing protocol.

Reconciliation

As this letter is being written, the reconciliation process, which is intended to locate and factor out any "human errors" in the test, is still underway. But we believe it is important that the reconciliation be a **full** reconciliation that verifies whether the ballot-image logs (mentioned above) in fact match the scripts, for each voter and for each line of the ballot, vote by vote — not just for the races where the Division of Elections initially found "variances" between the expected totals and the recorded totals. Otherwise, for example, machine errors that converted five Jennings votes to undervotes and that also converted five intentional undervotes to Jennings votes would go undiscovered, since the recorded totals for each candidate and for the undervotes would appear to be "correct."

To troubleshoot the reconciliation process, we hereby request a complete copy of all written records relevant to Tuesday's parallel test. Specifically, we would like to receive, as public records, among other things, as soon as possible, copies of all scripts (with any handwritten notations made during or after the test), zero tapes, tally tapes, event logs, ballot-image logs, and discrepancy logs (though it appeared that none of the auditors had been instructed to keep discrepancy logs, contrary to normal procedure in a well-run audit).

Using the Wrong PEBs

Just as Friday's test, unlike Tuesday's, will use iVotronic voting machines that actually were deployed on Election Day, it also should use PEBs that actually were deployed on Election Day. And the PEBs used should be the same ones that were used most heavily in those specific precincts and on those specific iVotronic machines. Again, the point is simple: to replicate actual Election Day conditions to the greatest extent possible.

Using Too Few Machines

The State's audit plan simply does not use enough machines to provide a reliable sample. As our experts discussed with Mr. Drury on November 15, given the number of machines used on Election Day and in early voting — nearly 1,500 in total — it would be sensible to test at least 20 deployed machines. In the interest of speed, that number might be reduced to 10, as our experts also explained to Mr. Drury. When we were informed that the State would refuse to test 10 actual Election Day machines, we provided, on request, a list of 6 precincts that would serve as particularly good sources of high-undervote machines. The State's plan, however, will test only 5 machines actually deployed on Election Day, and only 4 of those will be tested using actual voter scripts derived from the machine's own ballot-image logs. This is simply too small a sample to be reliable.

Ironically, this problem is compounded by the State's commendable decision to choose, within each precinct, the machine with the highest congressional undervote rate. Choosing machines that recorded congressional undervotes for between one-quarter and one-half of the actual Election Day voters severely diminishes the already too-small pool of Buchanan votes and Jennings votes that might be converted into undervotes through machine error. Indeed, the four machines that the State is planning to test on Friday with scripts derived from those machines' ballot-image logs recorded only 157 votes for Jennings or Buchanan. They thus represent less than one-sixth of one percent of all Jennings and Buchanan votes recorded by Sarasota County's iVotronic system. That is far too small a sample size for a thorough and exacting audit.

More machines should be tested. But as our experts proposed to Mr. Drury, one way to at least somewhat ameliorate this problem would be to write the scripts so as to replace most (but of course not all) of the supposed congressional undervotes with Jennings votes or Buchanan votes. That would more closely simulate what actually happened on November 7, when voters attempted to cast ballots for Jennings or Buchanan but those ballots were recorded as undervotes by the iVotronic system.

By refusing to follow this procedure, in essence the State has prejudged the verdict on the very machines it certified. The State continues to treat all recorded undervotes as if they were intentional undervotes. Tellingly, the State's posted audit plan proclaims, incorrectly, that "[t]he ballot image file contains the voter selections as they appeared on the review screen at the time the voter pressed the 'VOTE' button." If that were true, much of this entire controversy would disappear. Indeed, one of the most central questions the test should have been designed to answer is whether in fact the machines (on their ballot-image logs and elsewhere) properly recorded "the voter selections as they appeared on the review screen at the time the voter pressed

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the 'VOTE' button." The State's willingness to assume an answer to this central question speaks volumes about the unscientific nature of the test, at least as conducted so far.

* * *

Again, we would like to reiterate our gratitude for the courtesy and patience that the Division's staff exhibited during yesterday's test. But we believe it is essential that each and every one of the flaws and defects identified in this letter should be rectified before Friday, so that the test of the actual Election Day machines can at least begin to approach the level of professionalism, reliability, and accuracy that the people of Florida deserve from their government.

Sincerely,


Kendall Coffey

KC:ssb

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FLORIDA DEPARTMENT *of* STATE

Kurt S. Browning
Secretary of State

For Immediate Release

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**STATEMENT FROM SECRETARY KURT S. BROWNING ON THE
RELEASE OF THE DIVISION OF ELECTIONS AUDIT REPORT
AND INDEPENDENT STUDY FROM THE SECURITY AND
ASSURANCE IN INFORMATION TECHNOLOGY LAB**

“At the request of the Secretary of State, the Division of Elections conducted a thorough audit of the election results in Sarasota County, Florida for the November 7, 2006 general election. The audit set out to ascertain if any process, definition, machine or tabulation error contributed to the contest’s undervote total.

The audit team concluded that there is **no evidence** that suggests the official results are in error, and further concludes that the results of the November 7, 2006 election in Sarasota County are accurate. Additionally an independent study was conducted by the Security and Assurance in Information Technology (SAIT) Lab at Florida State University of the iVotronic and PEB source codes. That study found no evidence that would have contributed to the undervote.

As always, Governor Crist and I are committed to ensuring that every Floridian’s vote is counted and I am confident that the race in Sarasota County was fair and accurate.”

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**AUDIT REPORT
OF
THE ELECTIONS SYSTEMS AND SOFTWARE, INC.'S,
IVOTRONIC VOTING SYSTEM
IN THE 2006 GENERAL ELECTION
FOR SARASOTA COUNTY, FLORIDA
(February 2007)**



Florida Department of State
KURT S. BROWNING
Secretary of State

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EXECUTIVE SUMMARY

On November 9, 2006, pursuant to authority under sections 101.5607(1), and 101.58(2), Florida Statutes, the Secretary of State for Florida directed the Division of Elections/Bureau of Voting Systems Certification to conduct an audit of the 2006 General Election held in Sarasota County. The purpose of the audit focused on an examination of the iVotronic Direct Recording Electronic (DRE) touch screen voting device and attendant elections procedures with regard to the U.S. Congressional District 13th race. See Appendix A (Letters to Sarasota County Supervisor of Elections, Kathy Dent; November 9, 11, and 16, 2006).

The audit team created an audit plan. See Appendix B (Audit Plan). The audit plan consisted of three major components: 1) the parallel tests of the Sarasota County's Election Systems and Software, Inc., iVotronic Voting Systems, Release 4.5 Version 2, 2) an independent source code review of the iVotronic Voting System Firmware, and 3) an examination of Sarasota County Supervisor of Elections' Office's election conduct, procedures, results, and certified voting system. A number of audit plan activities were also addressed through activities arising from the machine and manual recount processes triggered under sections 102.141(6), and 102.166, Florida Statutes, in the U.S. Congressional District 13th race. With the exception of the independent source code review, the audit occurred on the premises of the Sarasota County Supervisor of Elections' offices and its offsite operational warehouse facility in Sarasota County.

The summary results of the audit are as follows:

- *Parallel Tests.* The audit team conducted parallel tests on November 28, 2006, and December 1, 2006 of the Election Systems and Software, Inc., iVotronic Voting System, Release 4.5 Version 2. The audit team concluded that the iVotronic direct recording devices correctly captured the voters' selections and accurately recorded the votes cast as displayed to the voters on the review touch screens. The results were issued on December 18, 2006. See Appendix C, Parallel Test Summary Report.¹
- *Independent Source Code Review of the iVotronic Voting System Firmware.* In December 2006, the Florida Department of State contracted with Florida State University and its Security Analysis in Information Technology (SAIT) Laboratory to conduct an independent software review and security analysis of the firmware for the Election Systems and Software, Inc.'s iVotronic Voting Systems, Release 4.5 Version 2.² The FSU/SAIT Laboratory issued its findings in a separate final report, entitled "Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware, February 2007."³ The project team found that the iVotronic firmware, including faults identified, did not cause or contribute to the U.S. District Congressional 13 Race undervote.

¹ Also available at: <http://election.dos.state.fl.us/index.html>

² Florida State University Statement of Work "Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware", 2/20/2007 available at: <http://election.dos.state.fl.us/index.html>

³ "Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware, February 2007"; available at <http://election.dos.state.fl.us/>

- *Examination of Sarasota County's Elections Office Election Conduct, Procedures Results, and Certified Voting System.* The audit team also examined elections procedures and practices, and the certified voting system. The examination covered election setup, procedures, voter signature count, precinct zero and result tapes, sample deployed touch screens, central county system, iVotronic EEPROMs, unity system, incident reports, security procedures, work instructions, absentee and provisional vote accumulation, ballot images from randomly selected touch screens, the installed software, and a verification of the installed firmware in the touch screens.

The audit team found no evidence to suggest or conclude that the official certified election results did not reflect the actual votes cast. The audit team also found no evidence of election procedural error, no evidence of unapproved or unauthorized software/firmware installation, manipulation or alteration, no evidence of machine malfunction, and no evidence of elections' staff misconduct that could have contributed to the higher than expected under-vote reported in the U.S. Congressional District 13 race.

The audit team found that the Sarasota County Supervisor of Elections and staff conducted themselves in conformance with established procedures and documented well their processes for elections conduct, with a few noted exceptions. In order to assist Sarasota County in its continuing commitment to improve the security and integrity of the voting system and the election process, the audit team recommends the following:

- Enhance and supplement the top-level security procedures with written lower-level work instructions in order to memorialize Sarasota County's unique processes.
- Develop a more reliable methodology for recording voter signature counts.
- Revamp the procedure to prohibit the closing of touch screens prior to closing the polls.
- Require the production of the early voting results tape on election night after the polls close.
- Develop security training procedures for elections staff and poll workers.

Finally, in light of the national attention garnered by the events surrounding the Sarasota County undervote rate in the U.S. Congressional District 13 race, and the momentum for further state and federal election reform, the audit team strongly recommends that human factors in the voting process and the interaction between voters and voting systems not be underestimated. Further in-depth study is warranted in this area, particularly in the area of effective ballot design.

I. BACKGROUND

Subsequent to the 2006 General Election, a report that a higher than expected under-vote in the U.S. Congressional District 13 race (hereinafter "District 13") in Sarasota County had occurred prompted the Florida Secretary of State to direct the Division of Elections/Bureau of Voting System Certification to conduct an audit of the Sarasota County's voting system and attendant procedures. The audit team consisted of four members from the Division of Elections/Bureau of Voting System Certification, supplemented by the support of 12 additional staff solely for conducting the parallel tests. The other part of the audit team consisted of the independent review project team assembled pursuant to a contract with the Florida State University's Security Analysis in Information Technology (SAIT) Laboratory (hereinafter "FSU/SAIT project team") to conduct the independent code review of the iVotronic voting system firmware.⁴

II. OBJECTIVES AND SCOPE

The objective of the audit focused on verifying whether the Election Systems and Software, Inc.'s iVotronic Voting System, Release 4.5 Version 2 accurately recorded voters' selections and votes cast and tabulated the results from the November 7, 2006 General Election, with regard to the District 13 race) in which a higher than expected undervote was reported. In order to accomplish that objective, the audit team developed an audit plan to ascertain if a process, definition, machine, tabulation, anomaly or other factor caused or contributed to the District 13 race's undervote total.⁵ The audit plan consisted of three major components: 1) parallel testing of the Election Systems and Software, Inc., iVotronic Voting Systems, Release 4.5 Version 2, 2) an independent source code review of the iVotronic Voting System firmware by the FSU/SAIT project team, and 3) an examination of the elections conduct, procedures, and results including verification of the certified voting system.

With the exception of the independent software source code review conducted by FSU/SAIT project team, audit activities occurred primarily at the Sarasota County Supervisor of Elections' main offices located at 101 S. Washington Boulevard in Sarasota, Florida, and at the Voting Equipment Facility (VEF) which is a warehouse located at the Interim Government Operations Center (IGOC) located at 1001 Sarasota Center Boulevard. The Sarasota County Supervisor of Election's Office stores the iVotronic touch screens at the VEF and the VEF is also where the machine and manual recounts occurred for the District 13 race. An inventory of the audit documentation is attached hereto as Appendix D. An acronym list is also provided in Appendix E.

III. PARALLEL TESTS

The audit team initiated the audit by conducting two parallel tests of the touch screens for the *Election Systems & Software (ES&S) Voting Systems, Release 4.5, Version 2, iVotronic* voting system in an effort to replicate the undervote count observed for the District 13 race during the 2006 General Election held in Sarasota County. A parallel test is a test activity

⁴ *Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware*, February 2007 available at: <http://election.dos.state.fl.us/>

⁵ See Audit Plan, November 2006, Appendix B.

during which election day voting is simulated. The point of the test is to ascertain the accuracy and reliability of the deployed voting system devices with due consideration given to ballot style, layout, coding, demographics, and operation. The test team plays the role of the voters and the ballots are cast in accordance with a predetermined test script. The parallel tests focused on the iVotronic touch screen's ability to accurately record a voter's selections as presented to the voter on the touch screen's ballot review pages. In addition, the parallel tests also examined various complaints regarding a voter's ability or difficulty in making his or her vote selections.

The audit team conducted the first parallel test on November 28, 2006 on five non-deployed iVotronic touch screens, and the second parallel test on five deployed touch screens on December 1, 2006. All the vote differences encountered during the first parallel test were the result of two script errors and eight vote selections that were not entered according to the test script. All the vote differences encountered during the second parallel test results were the result of one incorrectly documented vote selection for the ad hoc machine and two vote selections that were not according to the test script. The Parallel Test Summary Report issued on December 18, 2006, detailed the process followed by the audit team and included the audit team's findings. See Appendix B, attached and incorporated by reference in its entirety.

In summary, the audit team reported in the *Parallel Test Summary Report* that the iVotronic touch screens accurately captured the voters' selection as presented on the review screens. The parallel tests including a review of the parallel test videos did not reveal or identify any latent issues associated with vote selection or the accuracy of the touch screens' tabulation of the votes as cast.

IV. INDEPENDENT SOURCE CODE REVIEW OF THE iVOTRONIC VOTING SYSTEM FIRMWARE

On December 15, 2007, the Florida Department of State contracted with Florida State University and its Security Analysis in Information Technology (SAIT) Laboratory to conduct an independent rigorous scientific software review and security analysis of the iVotronic firmware for the Election Systems and Software, Inc.'s iVotronic Voting Systems, Release 4.5 Version 2. The FSU/SAIT Project team assembled a group of professionals (including professionals outside Florida State University) with collective expertise in computer science, security, voting systems, and software. The FSU/SAIT project team issued its findings in a separate final report, entitled *Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware*, February 2007.⁶

V. EXAMINATION OF SARASOTA COUNTY'S ELECTIONS OFFICE ELECTION CONDUCT, PROCEDURES, ELECTION RESULTS, AND CERTIFIED VOTING SYSTEM

The audit team also conducted a number of examinations in the following areas: election setup, procedures, voter history, precinct zero and result tapes, sample deployed touch

⁶ *Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware*, February 2007; available at: <http://election.dos.state.fl.us/>

screens, central county system, iVotronic EEPROMs, Unity system, incident reports, security procedures, work instructions, absentee and provisional vote accumulation, ballot images from randomly selected touch screens, the installed software, and a verification of the installed firmware in the touch screens deployed by the Sarasota County Supervisor of Elections for use in the 2006 General Election.

A. Voting System

The audit team examined the certified voting system deployed for use in the 2006 General Election, the *Election Systems & Software (ES&S) Voting Systems, Release 4.5, Version 2*.⁷ This voting system included enhanced optical scan firmware for precinct count (M100) and central count (Model 650) tabulators and the iVotronic touch screen with firmware version 8.0.1.2 (with the option of a 12-inch or 15-inch DRE touch screen). Sarasota County used only the 12-inch version of the iVotronic touch screen.

This voting system also included some of the election administration elements from the Unity 2.4.3 system, (renamed Unity 2.4.4.2 for this application). The Division of Elections/Bureau of Voting Systems Certification certified Unity 2.4.4.2 and the iVotronic firmware 8.0.1.2 as part of "*ES&S Voting System, Release 4.5, Version 1*". The "*ES&S Voting System – Release 4.5, Version 2*" is identical to *Release 4.5, Version 1* except for the ES&S models of optical scanners and a minor change to Unity's Election Reporting Manager (ERM). The certification timeline for this voting system follows:

ES&S Voting System Release 4.5, Version 2 Certification: 0508ES&S-02

Revision	Date	Changes
Original	08/18/05	Initial certification
Revised	11/10/05	Corrected the Oracle version number
Revision 2	07/17/06	Added optional equipment: Battery charger & compact flash multi-card reader/writer. Removed voter activated PEBs from the system configuration.
Revision 3	09/08/06	Added Service Release 1 (SR-1) to Election Reporting Manager (ERM)

As noted, the latest revision to the voting system (Revision 3, dated September 8, 2006) lists the ERM version as 7.0.0.3 with Service Release 1 (SR-1). ES&S developed SR-1 to revise the ERM report function and facilitate the extraction of undervoted ballot images from a universal primary contest (UPC).⁸ This SR-1 is an enhancement to a post-election results reporting function that sorts ballot images for a primary election and otherwise has no impact on the election definition or on election night results reporting functions. SR-1 is a revision to both Florida certified voting systems: "*ES&S Voting System Release 4.5, Version 1*" and "*ES&S Voting System Release 4.5, Version 2*". However, the Sarasota County Supervisor of Elections' Office retained the Revision 2 configuration⁹ and did not use the Revision 3 voting system with the SR-1 update.

⁷ Voting system certification # 0508ES&S-02 (Revision 2), dated July 17, 2006.

⁸ The UPC is unique to Florida's closed primary elections and occurs when an office up for election has only one political party with a slate of candidates and that race's winner will go unchallenged during the general election. Under these conditions, this district race appears on all the relevant primary ballots, thus allowing cross-party voting for this race in a closed primary election.

⁹ Configuration for the "*ES&S Voting System, Release 4.5, Version 2*" revision 2:

Election Administration:

- Unity Version 2.4.4.2
 - Audit Manager, version 7.0.2.0
 - Election Data Manager (EDM), version 7.2.1.0
 - ES&S Ballot Image Manager (ESSIM), version 7.2.0.0

Note that the Model 150 central count tabulator is no longer deployed in Florida. Sarasota County does not have the Model 100 precinct ballot counters (i.e., M100 precinct optical scanners) in its inventory. In addition, Sarasota County Supervisor of Elections coded the 2006 Primary and General Elections as text based elections. Therefore, Sarasota County Supervisor of Elections' staff did not use the iVotronic Image Manager or the Oracle database, although these items are installed as part of their Unity system. Sarasota County Supervisor of Elections' office has two banks of eight modems with each bank linked to a Data Acquisition Manager (DAM) computer with an eight-port Sealevel serial card. The second set of modems and the second DAM computer served as a backup system. The

- Hardware Programming Manager (HPM), version 5.0.3.1
 - COTS OmniDrive or similar PCMCIA interface *(for use with Model 100)*
 - Needham's Electronics EMP-11 Device Programmer w/ES&S 2102 piggyback card *(for use with Model 150)*
 - COTS Zip drive *(for use with Model 650)*
 - San Disk Image Mate or similar compact flash interface *(for use with iVotronic compact flash cards)*
 - Optional Compact Flash Multi-Card Reader / Writer, version 1.0
- Election Reporting Manager (ERM), version 7.0.0.3
- Optional software
 - Data Acquisition Manager (DAM), version 6.0.0.0 *(for modem communications)*
 - iVotronic Image Manager (iVIM), version 1.2.3.0 *(for bitmap system)*
- Optional hardware
 - One or more Equinox multi-modem adapters, 4 or 8 ports *(for use with Data Acquisition Manager)*
 - One or more Sealevel Systems COMM+8.PCI serial adapters *(for use with Data Acquisition Manager and a jurisdiction's existing modem bank)*
- COTS software
 - Optional Oracle 9i, version 9.2.0.1.0 *(for use with iVotronic Image Manager)*
 - Adobe Acrobat Reader, version 7.0 Standard or later
 - Adobe Type Basics 65 or similar font manager *(for Helvetica fonts)*
 - RM Cobol, version 7.50 or later
 - Cobol Wow, version 3.12 or later
 - Norton Anti Virus 2004 or equivalence

Precinct Count *(one or more of the following):*

- Model 100 Precinct Ballot Counter, hardware version 1.3,
 - w/firmware version 5.0.0.0
- Auxiliary equipment for Model 100:
 - Optional internal modem
 - Metal Ballot Box
- iVotronic DRE (12" & 15" w/ and w/o ADA), hardware version 1.0
 - w/ firmware version 8.0.1.2
- Auxiliary equipment for iVotronic DRE:
 - PEB Rev: iV1.7-PEB-S, iV1.7b1-PEB-S, iV1.7b2-PEB-S, iV1.7c-PEB-S
 - COTS headphones for audio ballots *(for ADA iVotronics)*
 - Communications Pack
 - Optional iVotronic Battery Charger, version 1.0

Central / Absentee Count *(one or more of the following):*

- Model 150 Central Ballot Scanner, hardware version 1.1
 - w/ firmware version 2.1.2.0
 - Two COTS parallel printers
- Model 650 Central Count Ballot Tabulator, hardware version 1.0 or 1.1
 - w/ firmware version 2.1.0.0
 - Two COTS parallel printers

optional Compact Flash Multi-Card Reader / Writer, version 1.0 in the certified configuration is an ES&S product created exclusively for ES&S's voting systems customers. As such, this device did require a qualification test, since it was not a commercial-off-the-shelf (COTS) item. However, Sarasota County Supervisor of Elections staff did not have the ES&S duplicator and instead used a COTS memory card duplicator; the International Microsystems Incorporated M6600 Memory Card Duplicator with 24 sockets.¹⁰

The interface between the Unity election management system and the precinct count tabulator (iVotronic touch screen) is a personalized electronic ballot (PEB) and a compact flash card. The compact flash card is a required element for all iVotronic touch screens that use a bitmap election definition and for use with the Help America Vote Act (HAVA) compliant iVotronic touch screens as a means for storing the audio files. The HAVA compliant touch screens are often generically referred to as the Americans with Disabilities Act (ADA) touch screens. However, since Sarasota County used a text-based election definition instead of a bit-map definition for the 2006 General Election, the county only needed to use the compact flash cards for the ADA iVotronic touch screens.

The audit team also found that the Sarasota County Supervisor of Elections' staff, as a matter of practice, installed and sealed compact flash cards in the ADA and non-ADA iVotronic touch screen prior to the start of election for later use in downloading iVotronic audit data after the polls had closed. The Sarasota County Supervisor of Elections' staff also maintained tracking records of the compact flash cards assigned to each touch screen and the assignment of personalized electronic ballots (PEBs) to each precinct and early voting location.

The interface between Unity and the central count tabulator (Model 650) is a zip disk. The zip disk is used to load the election parameters into the tabulator and to accept the tabulation results for upload into Unity's Election Reporting Manager (ERM). Sarasota County SOE elections staff used zip disks to transfer absentee totals into Unity's ERM and used the PEBs on election night to transfer election day totals into Unity. The elections staff used the compact flash cards to transfer the early voting totals into Unity's ERM. The elections staff did not insert early voting poll worker PEBs into an iVotronic touch screen or any other device once the polls were closed. The elections staff printed the results tapes from the early voting master PEBs after the results contained on the compact flash cards were uploaded into Unity's ERM. Likewise, the activator PEBs used on election day were never inserted into an iVotronic touch screen or any other device once the polls were closed. On election night after the poll workers closed the polls, the poll workers transported the election day master PEBs to one of four regional locations that were under Sarasota County's control. The elections staff used these four sites to modem the summary results to the central tabulation location. As a post-election activity, the elections staff uploaded the iVotronic audit data from the compact flash cards.

B. Access to Physical Facilities

The audit team site visited the offices for the Sarasota County Supervisor of Elections located at 101 S. Washington Boulevard in Sarasota, Florida, and a satellite warehouse facility located at the Interim Government Operations Center (IGOC) located at 1001 Sarasota Center Boulevard. The latter facility, called the Voting Equipment Facility

¹⁰ International Microsystems Incorporated, www.imi-test.com

(VEF), is where the Sarasota County Supervisor of Elections stores the iVotronic touch screens. The VEF also served as the site for the machine and manual recounts for the District 13 race, and the parallel tests conducted by the audit team.

Access to the VEF is restricted to the Supervisor of Elections and to authorized personnel with special identification that permits entry to the facility. Both the offices for the Sarasota County Supervisor of Elections and the VEF have video surveillance. The secured access Data Acquisition and Reporting Center (DARC) is located on the first floor of the VEF. This DARC room is where the elections staff prepares the election definition, creates the election media, and tabulates the results. The DARC has windows on three sides to allow public and media viewing. Entry to the DARC room is under a dual access control system and log sheet. The DARC room contains the isolated Unity server, a coding workstation, a ballot workstation, two Election Reporting Manager (ERM) workstations, and two data acquisition (WDAM) workstations along with a 24-port COTS compact flash duplicator, and COTS printer. Also resident in the DARC room are two Model 650 central count tabulators to provide high speed optical scanning of absentee ballots. The Sarasota County Supervisor of Elections' staff also stores in this room fifteen 12-inch iVotronic supervisor's terminals of which six were used to prepare the activator PEBs for the 2006 General Election. In addition, a COTS video system is present that feeds the ERM streaming summary reports to the canvassing board and the public viewing areas via coax cables. The video system is a Brightboard P27 Digital Signage System. Aside from the modems, this is the only other external connection to the Unity system. Between elections, the DARC room houses all the compact flash cards and PEBs, and retains the compact flash cards and PEBs that are not deployed during an election.

C. Election Setup and Conduct

The audit team conducted an examination of the procedures and practices for election set up and operation for the 2006 General Election for Sarasota County. The Sarasota County Supervisor of Elections' staff used both paper ballots and direct recording electronic (DRE) ballots. Absentee voters used paper ballots. Early voting, provisional, and election day voters used the iVotronic touch screens. Nine different ballot styles existed. In addition, the Supervisor of Elections designated 7 early voting sites and 156 election day polling locations. The Supervisor of Elections deployed 1,506 iVotronic DREs: 86 touch screens assigned to the 7 early voting sites and 1,420 touch screens assigned to the 156 polling locations.

Each polling location included at least one ADA iVotronic touch screen. An ADA touch screen is identical to a non-ADA touch screen except that the ADA touch screen has an optional audio ballot capability and includes a three-button voter interface integrated into the case immediately below the touch screen. The use of the term "ADA touch screen" is only intended to identify those touch screens that can satisfy the audio ballot requirements¹¹ and is not intended to imply any additional assessable capability. Sarasota County has no restriction regarding the use of an ADA touch screen for regular voting. Thus, such a device may be used by a vision impaired voter as well as those voters that do not require the audio enhancement.

¹¹ Section, 101.56062(1)(n), Florida Statutes

The Supervisor of Elections held in reserve 31 touch screens (9 non-ADA and 22 ADA touch screens). Twenty-four (6 non-ADA and 18 ADA touch screens) were ultimately available as spares as documented on November 5, 2006.

The audit team learned that three members of the Sarasota County Supervisor of Elections' staff were authorized to code an election and these individuals plus a fourth were authorized to prepare the election media. For the 2006 General Election, the elections staff created twelve qualification PEBs that were encoded with the Election Qualification Code (EQC). This is consistent with elections staff's practice to create a new EQC for every election to prevent unauthorized PEBs and/or touch screens from being used during that election. The qualified PEBs do not contain election parameters/definitions. The qualified PEBs are used to key the iVotronic touch screens with the election specific EQC identifier.

The elections staff transferred the 12 qualified PEBs to the VEF supervisor. The VEF supervisor and his staff used the qualified PEBs to key the iVotronic touch screens. Once the VEF staff completed this task, the VEF supervisor retained custody of the qualified PEBs at the VEF. The VEF staff stored the iVotronic touch screens in their protective storage case. This case also served as the poll booth when assembled and set up at the polling location. The protective case was padlocked whenever the touch screen was in its case and sealed with a taper-evident seal whenever it was set for an election. Similarly, the compact flash card also had a taper-evident seal. The VEF staff recorded the seal numbers in the custody database system. The VEF staff used an iVotronic Custody Sheet to track precinct assignment of the touch screens via their serial numbers and seal numbers. The VEF staff stacked 24 padlocked cases on a metal pallet with removable support legs. The VEF staff stored the pallets three high on these support legs, thus each stack of pallets contains 72 touch screens. The preceding description underscored the formidable logistical obstacles to accessing or tampering with the iVotronic touch screens in this facility. The audit team found no evidence to suggest or conclude that secured access to the iVotronic touch screen was comprised, or that unauthorized access occurred.

With few exceptions, the Sarasota County Supervisor of Elections staff followed the practice of using the same PEB precinct assignments that the elections staff developed for the primary election. This practice facilitated preparations for a general election and minimized re-labeling the PEBs. The records showed that all the PEBs were qualified with the same EQC used to key the iVotronic touch screens. This activity took place on a single day in the DARC room. Next, the elections staff used the Unity Hardware Programming Manager (HPM) and supervisor touch screens to load the election definition onto the qualified PEBs. The elections staff randomly selected 6 of 15 available supervisor touch screens for this activity and completed the process in one day. The elections staff used the master PEBs to open the poll on an iVotronic touch screen and used each activator PEB to bring up a ballot. Each polling location would have approximately four or five activator PEBs in addition to the master PEB. Next, the elections staff again used the master PEB to close the touch screen, thus verifying the correct operation and election definitions coded into these devices prior to sealing the PEBs in their containers. Before sealing the master PEB, the elections staff used a supervisor touch screen to clear the master PEB of any residual votes from this test. The PEBs were stored in cages under dual custody.

Note that there is no difference between a master PEB and a poll worker activator PEB other than a plastic color band. Any of these PEBs may serve as the master PEB, but to minimize poll worker confusion, the master is typically a color (green) that is different

from that used for the activator PEBs (red).¹² A poll worker activator PEB becomes a master PEB when the poll worker uses the PEB to open the polls. That PEB will then contain a list of all the iVotronic touch screens that were opened by the PEB. Once the poll worker opens all the touch screens at a polling location, the last touch screen to be opened will be connected to a communications pack that contains a thermal printer via a RS-232 serial ribbon cable. The poll worker will then print the zero tape for that polling location. After creating the zero tape, the master PEB is set aside in a secure location and not used again until the polls are ready to be closed. The poll worker will close the poll by collecting vote summaries from all the touch screens opened by that PEB. Again, the poll worker will connect the communications pack to the last touch screen to be closed and will then print the results tape. During the time that the polls are open, the poll worker will use the activator PEBs to bring up the ballot on the touch screen for each voter. The master PEB may be utilized for this task as well. However, it is a common security practice to limit the master PEB to only opening and closing the poll.¹³ The activator PEBs contain only the EQC and election definition (i.e., ballot definitions) and do not acquire any vote information during their usage. Only the master PEB will have summary results after the poll closing and collection process.

A continuing examination of the records by the audit team indicated that on election night after the polls were closed, the zero and results tape along with the master PEB were placed in a yellow transfer bag. The poll workers transferred these bags from each precinct directly to the DARC room or to one of the county's controlled regional sites. At a regional site, the elections staff modemed the results to the DARC room using the DAM host/client protocol. The remaining activator PEBs were transferred to the DARC room later that night. The zero and results tape along with the master PEB were transferred to the DARC room under police escort. The regional sites used a laptop computer with the Unity Data Acquisition Manager's client software. The DARC has a DAM host that establishes a handshake with the client. This modem activity began upon an oral indication from the DARC personnel.

The audit team also re-examined the elections parameters and results for the Logic and Accuracy (L&A) tests conducted by the Sarasota County elections staff on October 20, 2006, and on November 1, 2006 (after early voting had begun). Based on the outcome of the first L&A test, the Sarasota County Supervisor of Elections serviced as needed the Model 650 central tabulator. A second L&A test was subsequently conducted to verify the correct operation of the voting system. In accordance with state law, the Supervisor of Elections forwarded the L&A test results and certifications to the Division of Elections/Bureau of Voting Systems Certification on November 1, 2006.¹⁴ The L&A test results showed no evidence of an abnormality with the District 13 race or any other race in Sarasota County. The L&A test results accurately reflected the expected totals from the test scripts.

The Sarasota County Supervisor of Elections' staff deployed the majority of the first L&A test touch screen units for use during the early voting period. Early voting started on October 23, 2006. According to the records, a poll worker at each early voting site opened the poll with a master PEB on the morning of the first day of early voting. Each night, a

¹² ES&S has also developed a voter activator PEB that the voter uses to bring up the ballot. However, voter activator PEBs are not deployed in Florida.

¹³ *Minimum Security Procedures*, Sarasota Florida, p. N-4.

¹⁴ Section 101.5607(1)(b), Florida Statutes and Rule 1S-2.015(5)(f), Florida Administrative Code

poll worker recorded the public count as displayed on the touch screen. Records indicate that elections staff did not use the practice of locking the touch screen via software. Instead, at the end of each early voting day, the poll worker removed the touch screens from their booths and stacked the units in a lockable cabinet for overnight storage. The cabinet was also located in a lockable room. During this time, the touch screen was not connected to any power source, and thus, remained dormant.

When the poll was opened the next morning for continuation of early voting, the poll worker reinstalled the touch screen into their booth and reconnected the power. To obtain the public count, the poll worker very quickly, in one motion, inserted and removed the PEB. This action activated the touch screen display, thus allowing the poll worker to observe the public count. However, the iVotronic touch screen may log this action as an invalid PEB in the event log, if there is quick insertion and removal of the PEB because the quick process does not allow the touch screen adequate time to establish the proprietary handshake and capture the PEB serial number. This is the primary reason why early voting touch screens exhibit a high number of invalid PEBs in their event logs. The audit team, however, did not find this standard practice to have contributed or to be in any way correlated to the undervote reported in the U.S. Congressional District 13 race.

D. Voter History/Signature Counts

The audit team examined the precinct registers and the precinct register signature counts provided by the Sarasota County Supervisor of Elections' staff. The spreadsheet of signature counts included the public count from the touch screen results tape, the public count as recorded by the poll worker on the "Poll worker Report Form" (PRF), the poll workers' count of signatures as recorded on the PRF, the elections staff's count of the signatures, and the public recount of the signatures that occurred during the machine recount. As an additional random check, the audit team manually counted the signatures from the following 16 precincts: 27, 31, 39, 63, 76, 78, 90, 105, 106, 113, 117, 118, 134, 136, 137, and 150.

The audit team made the following observations regarding the procedures for counting signatures:

- Sarasota County Supervisor of Elections' staff's signature count differed from the signature count obtained during the manual recount in 47 of the 156 precincts. Fourteen of the 47 precincts had differences greater than one signature. The touch screen public count and the transfer of this information by the poll worker to the Poll worker Report Form (PRF) showed one precinct that was off by one vote. This difference is solely attributable to human error as the process involves only the transfer of information from the results tape to the PRF.
- The poll worker signature count differed from the touch screen count in 48 precincts of which 17 precincts showed a difference greater than one signature. The greatest difference between the poll workers' count and the touch screen public count was 8 for precinct 48, but the difference between the touch screen count and the elections staff was two for the same precinct.
- The signature count from the machine recount agreed with the elections staff's count.
- The greatest difference between the elections staff's count with the touch screen public count was four.

- The audit team's own random signature count did not match with the elections staff's count for 10 of the 16 precincts. The audit team's count for three precincts did not match with either the poll workers' count, the elections staff's count, or the count obtained during the machine recount. The audit team's signature count against the touch screen public count was a difference of three in two sample precincts, a difference of two for two precincts and a difference of one for two precincts.

The discrepancies and uncertainty associated with signature counts may be attributed to a number of factors including the lack of a clear indication that the voter had signed the precinct register. For example, when a signature appeared more as a deletion (i.e., the appearance of a scribble intended to mean a deletion of a mark), a short squiggle, or lacked the required poll worker's initials,¹⁵ it was unclear whether to count the signature or to treat it as a scratch out or an inadvertent mark. The audit team encountered this possibility in 10 of the 16 precincts they examined. The audit team found the manual signature count process to be labor intensive and prone to miscount, and not the most reliable indicator of the number of voters that actually voted at a precinct.

E. Precinct Zero and Results Tapes

The audit team examined the precinct zero and results tapes. Although it is a preferred and common practice for the poll worker to remove the zero tape from the communication pack only after the results tape is printed and one continuous tape is produced, the Sarasota County Supervisor of Elections' staff did not consistently follow this practice. In some cases a replacement touch screen was introduced after the poll worker printed the original zero tape. In another case, the vote summary from a touch screen that needed to be replaced was collected by the master PEB prior to the poll closing. The Sarasota County Supervisor of Elections' staff made this decision to collect the votes as a precaution should the touch screen fail to function when the polls were later closed. However, there are preferred alternate procedures for recovering vote totals from touch screens that fail to close properly. When a replacement touch screen later arrived, a poll worker used the master PEB to open that touch screen as would be the normal process.

When the poll worker printed the zero tape, it also revealed the vote summary of the touch screen that was replaced, because it had been closed by this master PEB. The closing process performs a vote collection and creates a vote summary on the master PEB. The premature collection of the vote summary from a touch screen needing replacement should not occur at all prior to closing the poll. It is fundamentally important to ensure the integrity of an election by obtaining the zero totals and not prematurely revealing any vote totals in the process. The audit team recommends the implementation of the appropriate procedure in lower-level work instructions or in a revision to the poll workers' training manual.

As for the early voting results tapes, the audit team found that the Sarasota County Supervisor of Elections' staff did not produce the tapes until the day following election day. Although the results tapes cannot be obtained until after the election day polls are closed, the preferred procedure is to upload the early voting audit data into Unity's ERM on election night after the polls are closed. Immediately following or concurrent with this activity, the early voting results tapes should be printed using the early voting master

¹⁵ Section, 98.461(2), Florida Statutes

PEBs. It is important to ensure the integrity of an election by obtaining the results tapes as soon as possible and in view of the public. The audit team recommends that this procedural step be addressed in a lower-level work instruction for the DARC election officials.

The audit team also examined the zero and result tapes, and the results tapes printed from the vote recollection process in the machine recount. The audit team verified that the zero tapes indicated the counters were set to zero when the polls were opened. The audit team also examined the public count and protective count from both sets of results tapes along with the time and date that the polls were closed. The difference between the results tape's protective count and the zero tape's protective count should equal the results tape's public count. The audit team verified that the public count matched the difference between the beginning and ending protective counts and the machine recount results were identical to the original results tapes.

F. Sample Deployed Touch Screens

The audit team conducted an examination of a small sample of zero and results tapes for 46 touch screens representing 1,792 ballots from the North Port Municipal early voting site and the following precincts: 1, 31, 61, 85, 94, 130, 152. The 46 touch screens represent approximately 3% of the 1,506 touch screens deployed during the 2006 General Election for Sarasota County. Two of the 46 touch screens were used during early voting.

Next, the audit team obtained the event log reports for these same 46 touch screens and manually counted the number of ballots cast and confirmed that the results tapes' public count agreed with the event logs. The audit team also obtained and examined the ballot images for these 46 touch screens. The audit team manually counted the votes recorded within the touch screens' ballot images for the U.S. Congressional District 13 and Attorney General races. The audit team found the manual count of the votes cast for these two races agreed with the results tapes. However, as noted for the precinct register's signature count, there were several occasions where the audit team had to recount the votes from the ballot images to arrive at a consistent number.

The audit team confirmed that the vote totals obtained from the results tape matched the data that was uploaded into Unity's ERM, just as was verified during the machine recount. The audit team did not find (and the machine recount did not reveal) any evidence to suggest or conclude that the collection and final tabulation of touch screen vote totals were not accurately tabulated.

G. Central Count System

The Sarasota County Supervisor of Elections staff provided the audit team with access to the absentee signature envelopes. The audit team manually counted the accepted ballot signature envelopes from 16 absentee precincts as a random check and verified this count against the number of accepted ballots counted during the machine recount. The 16 precincts included: 27, 31, 39, 63, 76, 78, 90, 105, 106, 113, 117, 118, 134, 136, 137, and 150. These are the same precincts that the audit team used to count the precinct registers' signatures. The central count system consists of two Model 650 central tabulators, locally identified as Ballot Reader #1 and Ballot Reader #2. The COTS printers are Okidata Microline 520 dot matrix printers. Note that the audit team was not able to access a

sample of the absentee ballots to perform a manual count of the CD-13 race, because of the pending litigation of this particular race¹⁶.

H. iVotronic EEPROMs

The audit team selected six iVotronic touch screens for examination of the installed firmware. Two of these touch screens were previously used in the parallel testing and the remaining four units were election day touch screens that had never been reactivated since they were closed on election night. For the first touch screen examined, the audit team powered on the device and utilized the touch screen's firmware to download the audit data prior to physically extracting the EEPROMs. The EEPROMs are AMD's Am29LV160D flash memory. For the remaining units, the audit team extracted the EEPROMs prior to powering on the touch screens. Therefore, the information extracted from three of the four election day units represents information from touch screens that were in the exact same state these voting devices were in when they were closed on election night. This is the recommended course of action whenever one extracts the memory contents from an iVotronic touch screen.

The audit team used a Needhams EMP-300¹⁷ device programmer with a Pivot flash module programmer adapter card and Needham's EMPWin application to download the memory contents from the third and fourth EEPROMs. The third memory chip is one of the three redundant memories that contain the election definition, a configuration history, an event log, and the ballot images. The audit team used ERM to extract the event log and ballot images from the EEPROM 3 memory dumps and found this information in agreement with the information provided by the audit data. The fourth memory chip contains the touch screen firmware mapped to high memory. The audit team compared the extracted firmware to the escrowed firmware using PrestoSoft's ExamDiff Pro application.¹⁸ The audit team found the installed firmware to be an exact copy of the DOE escrowed firmware. Additionally, the SHA-1 hash of this firmware using Maresware's hash software is an exact match.¹⁹ The SHA-1 hashes for iVotronic firmware version 8.0.1.2 are:

File name	HASH value	File size (bytes)
DOE escrowed firmware with checksum set to zero:		
V8012.fmw	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
Sarasota's installed firmware:		
V0106366-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
V0110515-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
V0106775-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
V0105712-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
V0105346-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216
V0117973-V8012.bin	E9EFF14B28A49504DBEC9C2CA2DBC6929EC7F27E	393216

The list below identifies the iVotronic touch screens and their last activity prior to extracting the firmware.

¹⁶ See Jennings v. Elections Canvassing Commission et. al., Circuit Court for Leon County, Case 2006, CA 002973.

¹⁷ Needhams Electronics Inc. available at: <http://www.needhams.com/software-download.html>

¹⁸ PrestoSoft available at: http://www.prestosoft.com/ps.asp?page=edp_download

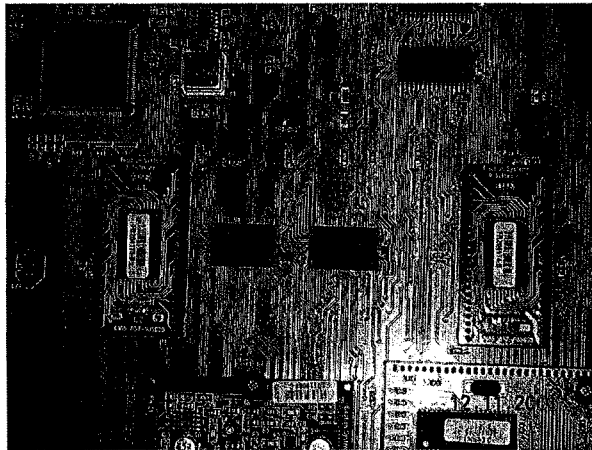
¹⁹ Hash.exe and Hashcmp.exe available from Mares and Company at: <http://www.dmares.com/index.htm>

iVotronic Sn #	Precinct	Last used	Last use
V0105712	105	Nov 7, 2006	Election day (<i>used firmware to first dump the memory</i>)
V0106775	113	Nov 7, 2006	Election day
V0106366	117	Dec 1, 2006	Parallel test
V0117973	76	Dec 1, 2006	Parallel test
V0105346	118	Nov 7, 2006	Election day
V0110515	117	Nov 7, 2006	Election day

The audit team found no evidence to suggest or conclude that Sarasota County's iVotronic touch screens firmware was compromised, altered or different from that held in escrow by Florida Department of State's Division of Elections.

In order to preserve the non-deployed touch screens for future analysis of the installed firmware, the audit team chose not to extract any information from these touch screens. These touch screens are the most logical touch screens on which to conduct further analysis provided no attempt is made to power the units during their storage. The audit team recommends that any future examination of the spare units should be preceded first by removing the EEPROM 3 and EEPROM 4 memory modules and obtaining a memory dump of their contents prior to activating these units.

The removable memory modules are shown in the following photo (EEPROM 3 is on the left, EEPROM 4 is on the right, and EEPROMs 2 and 1 are surface mounted between the two removable chips):



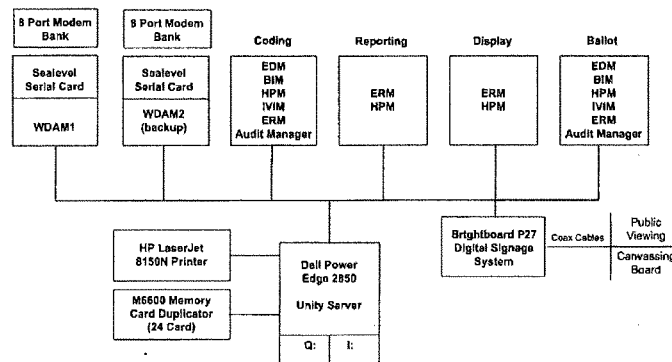
I. *Unity Server*

The audit team examined the Unity server. The Unity server is a Dell Power Edge 2850 and each of the Unity workstations is a Dell Dimension 9100. The operating system and the election reporting system requires a user name and password for each level of access. The audit team extracted a SHA-1 hash of the installed static files for comparison with the software held in escrow by the Florida Department of State's Division of Elections and as

installed on a similar computer. That comparison using the SHA-1 hash confirmed that the static files matched the files retained by department. The escrowed software is the witnessed compiled executables and support files that the Independent Test Authority (ITA) labs provided directly to the department. The audit team also reexamined Sarasota County's voting system acquisition filing and verified that the installation disks matched the escrowed uninstalled files. Based on a review of these data sets, the audit team found no evidence to suggest or conclude that the static files of this voting system software were altered or updated.

In order to preserve the exact settings used to create and tabulate the 2006 General Election for Sarasota County, the audit team also acquired screen shots within the entire set of Unity modules to document each menu setting. The Sarasota County Supervisor of Elections' staff have preserved their Unity system's hard drives, and replaced these drives with new ones in conjunction with ongoing litigation.²⁰

Sarasota County, Florida
Unity 4.5 Version 2 Voting System Configuration



J. Incident Reports

The audit team forwarded to the FSU/SAIT project team for the independent source code review the incident reports compiled by the Sarasota County Supervisor of Elections' staff for the 2006 General Election. The incident reports represent a total of 1,920 documented events of which 455 were related in some manner to the iVotronic touch screen. The audit team reasoned that the FSU/SAIT project team could categorize this data and correlate the information to relevant source code segments that may need a more thorough examination.

²⁰ See Jennings v. Elections Canvassing Commission et. al., Circuit Court for Leon County, Case 2006, CA 002973.

The FSU project team's review and findings are discussed in its separately issued final report.²¹

K. Security Procedures and Work Instructions

The audit team interviewed Sarasota County Supervisor of Elections' staff to ascertain the extent to which the staff followed its established Minimum Security Procedures.²² The audit team found overall that Sarasota's County Supervisor of Elections' Minimum Security Procedures met the basic requirements delineated in the Department of State's minimum security procedures rule²³ and address the major elements of the Division of Elections' Technical Advisory issued March 2006.²⁴ The audit team found that the elections staff complied with their documented processes, with a few exceptions noted.

The audit team noted the importance of Sarasota County Supervisor of Elections' existing multi-layered security that makes use of dual access control and positive inventory tracking methods to minimize security risks. However, the audit team noted the absence of any security training plans for the elections staff and written documentation of certain procedures currently committed only to rote memory.

L. Ballot Design Layout

The audit team examined the ballot design layout for the District 13 race in Sarasota County to determine if it was a contributing factor to the higher than expected undervote rate. The touch screen's first visual ballot image page presented the voters with the first of the federal races, the U.S. Senate race. The second visual ballot image page showed at the top the last federal race, the U.S. Congressional District 13 race. The District 13 race was followed by a highly visible header for the slate of statewide office races that started off with the Governor/Lt. Governor's race followed by its long list of candidates.

As noted earlier, the iVotronic touch screen provides voters with an opportunity to change or correct their vote selections on the review pages, prior to casting their vote. During the parallel testing of the sample Sarasota County iVotronic touch screens, the touch screens accurately recorded each test voter's selection when a test voter chose to make a selection in a race and cast a vote.²⁵ The audit team could not determine definitively whether the prominently displayed "STATE" header caused voters to overlook the federal District 13 race at the top of the ballot page.

A comparative review of the undervote rate for absentee ballots voters in Sarasota County for the District 13 race showed no demonstrable difference between the undervote rates for absentee ballot voters in Charlotte, DeSoto, Hardee, and Manatee counties who also had the District 13 race on their ballots.

²¹ Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware, February 2007; available at: <http://election.dos.state.fl.us/>

²² Minimum Security Procedures for Voting Systems – Sarasota County, Florida, Revised June 2006.

²³ Rule 1S-2.015 Minimum Security Procedures for Voting Systems, Florida Administrative Code, available at: <http://election.dos.state.fl.us/laws/AdoptedRules/ElectionsRules.shtml>

²⁴ Technical Advisory – Enhancements to Voting Systems Security Procedures, 3/03/06, Division of Elections, available at: <http://election.dos.state.fl.us/votemeth/index.shtml>

²⁵ Parallel Test Summary Report – Sarasota County, Florida - 12/18/06, Division of Elections, available at <http://election.dos.state.fl.us/index.html>

However, an examination of the undervote rate for voters using the Diebold TSx touch screen in Hardee County showed an undervote rate of 20.7% for the District 13 race.²⁶ This rate was based on the reported results of 12 undervotes out of the 58 votes that were cast on the Diebold TSx touch screen. In contrast, the undervote rate for the District 13 race in Hardee County was 5.6% for votes cast and tabulated on its optical scan voting system. This rate was based on a reported 253 undervotes out of 4,526 votes cast.²⁷

In examining the Diebold TSx touch screen ballot layout, the audit team noted that the layout consisted of a two-column presentation. The first ballot image page contained the federal races in the first column, leading off with the U.S. Senate race. The U.S. Congressional District 13 race appeared at the very bottom of the first column. The second column on the first page started off with the state races including the Governor/Lt. Governor race followed by the race for Attorney General. This layout and a similarly high undervote rate in Hardee County for the touch screen suggest the strong likelihood that like the ballot layout for Sarasota County, a non-optimal ballot design may have contributed to the undervote in Hardee County as well.

The audit team recognizes that a well-designed ballot layout is an important component of the voting process and that the ability of a voting system to accurately reflect the voter's intent to make a selection is inextricably tied to ballot design. The audit team recommends further in-depth review and study of this area which may also assist in the development of ballot design guidelines for use by election officials.

VI. CONCLUSION

Based on the foregoing, the audit team found no evidence to suggest or conclude that the Sarasota County iVotronic touch screens failed to accurately capture votes in the U.S. Congressional District 13 race, that a malicious code²⁸, or that the certified voting system was compromised or changed other than as certified or operated other than in the manner expected. The audit team found no evidence to suggest or conclude that the certified elections results are not an accurate reflection of the votes cast and tabulated.

Furthermore, the audit team found the Sarasota County Supervisor of Elections and staff conducted themselves appropriately, documented their processes well, and followed established procedures and standard practices, with relatively few noted exceptions. In order to assist Sarasota County in its continuing commitment to improve the security and integrity of the voting system and the election process, the audit team recommends the following:

- Enhance the top-level security procedures with written supplemental lower-level work instructions in order to memorialize Sarasota County's unique processes.
- Develop a more reliable methodology for capturing voter history

²⁶The audit team specifically examined a breakdown of Hardee County's recount data posted on the county's website http://www.hardeecountyelections.com/SOVC_REPORT_PAGE.htm

²⁷Note that unlike Sarasota County which uses solely touch screen voting systems, Hardee County is a county that uses primarily the Diebold Accuvote optical scanner voting system but provides a touch screen (the Diebold TSx) in each polling place to comply with federal requirements for voter accessibility for the disabled under the Help America Vote Act.

²⁸Classes of malicious code include viruses, worms, 'Trojan horses' or other harmful or intrusive auto-executable software.

- Revamp the procedure to prohibit the closing of touch screens prior to closing the polls.
- Require the production of the early voting results tape on election night after the polls close.
- Develop formal security training procedures for the elections staff and poll workers.

Finally, in light of the national attention garnered by the events surrounding the Sarasota County undervote rate in the U.S. Congressional District 13 race, and the momentum for further state and federal election reform, the audit team strongly recommends that human factors in the voting process and the interaction between voters and voting systems not be underestimated. Further in-depth study is warranted in this area, particularly in the area of effective ballot design.

Appendix A**Florida Department of State Letters Regarding Voting System Audit
in Sarasota County, Florida**

- Letter from Secretary of State Sue M. Cobb to Sarasota County Supervisor of Elections, Kathy Dent; November 9, 2006
- Letter from Secretary of State Sue M. Cobb to Sarasota County Supervisor of Elections, Kathy Dent; November 11, 2006
- Letter from Secretary of State Sue M. Cobb to Sarasota County Supervisor of Elections, Kathy Dent; November 16, 2006



STATE OF FLORIDA
DEPARTMENT OF STATE

JEB BUSH
Governor

SUE M. COBB
Secretary of State

November 9, 2006

The Honorable Kathy Dent
Sarasota County Supervisor of Elections
101 South Washington Blvd.
Sarasota, FL 34236-6940

Dear Supervisor Dent:

As Division of Elections Director Roberts discussed with you today, pursuant to the Department of State's authority under Sections 101.5607(1)(c) and 101.58(2), Florida Statutes, I am directing members of my staff to conduct an audit of Sarasota County's voting system and attendant procedures with regard to the United States Congressional District 13 race.

The Secretary's Chief of Staff Heidi Hughes and Chief of the Division of Elections Bureau of Voting Systems Certification will be in Sarasota today for discussion and preliminary conversations.

We appreciate your invitation for our staff to observe any recount of this race, should one be ordered, along with you and your staff's full cooperation as we conduct the audit.

At this time it is expected that the members of our audit team will include:

David Drury, Chief of the Bureau of Voting Systems Certification
Danielle Scoggins, Senior Management Analyst
Richard Harvey, Government Operations Consultant
Sharon D. Larson, Deputy General Counsel

Sincerely,

Sue M. Cobb

Sue M. Cobb
Secretary of State



JEB BUSH
Governor

STATE OF FLORIDA
DEPARTMENT OF STATE

SUE M. COBB
Secretary of State

November 11, 2006

The Honorable Kathy Dent
Sarasota County Supervisor of Elections
101 South Washington Blvd.
Sarasota, FL 34236-6940

Dear Supervisor Dent:

We thank you for your continued commitment and cooperation in the process of examining Sarasota County's voting systems and procedures with regard to the United States Congressional District 13 race. Given our level of concern about this race and the number of voters who did not choose a candidate, we are paying very serious attention to the matter. An exacting and thorough audit is mandated and will be executed in an expeditious manner. The Department, working with you and your staff, will look into all possibilities to understand whether the number of undervotes in this race is indicative of an anomaly. Our shared goal is to ensure the integrity and accuracy of voting systems and elections in Florida.

Certain audit activities can be commenced immediately, including manual review of all relevant records and parallel testing to simulate election day conditions using Sarasota County direct recording electronic (DRE) touchscreens prepared for, but not used in, the general election. Based on preliminary discussions between you and Department staff, we have determined to proceed with the audit in the following manner: Florida Division of Elections, Bureau of Voting Systems Certification personnel will conduct an audit of the Sarasota County voting system beginning on November 13, 2006. The audit team, led by Mr. David Drury, Bureau Chief, may be supplemented by additional personnel as the need arises. The structure of this audit will not interfere with the conduct of any recount in the 13th Congressional District.

In addition, the audit team will conduct at least two parallel tests of the iVotronic voting equipment. The first of these tests will utilize at least four of the iVotronic DRE touchscreens that were held in reserve and not deployed on Election Day. The second such test will utilize actual touchscreens used during the election once the recount is complete. Each of these tests will require 14 hours to complete and it is anticipated that the first test will be conducted and completed on Wednesday, November 15, 2006. Each parallel test will utilize the actual ballot images and event logs from the Sarasota County general election as the test script. These items will be extracted from the Election Day audit data of those iVotronic touchscreens identified by

The Honorable Kathy Dent
November 11, 2006
Page 2

the team based on precinct demographics and the magnitude of undervotes in the 13th Congressional District. Results from the first parallel test should reveal the presence of an anomaly within the touchscreen if such an anomaly is present. The second parallel test is intended to confirm the results of the first parallel test.

The audit plan includes elements that encompass the election process, ballot accounting, tabulator performance, and forensic analysis. The audit will focus on the following areas: the precinct count equipment, the central count (absentee) equipment, the ES&S Unity System (election definition and tabulation), the installed iVotronic firmware and source code, the Sarasota County elections security procedures, event logs, and the logic and accuracy records. The intent of this portion of the audit is to ascertain whether a process error or malicious action influenced the number of undervotes.

Our audit team has extensive expertise. We have enclosed biographical information on the Division of Elections technical staff participating in the audit. Information on further staffing will be forthcoming.

We all agree that the audit and testing procedures are critical steps in determining accuracy of the election and assuring voters that they can be confident in the results.

Sincerely,

Sue M. Cobb

Sue M. Cobb
Secretary of State

Attachment



FLORIDA DEPARTMENT OF STATE

Sue M. Cobb
Secretary of State

Florida Department of State Audit Team
~Sarasota County, November 13, 2006~

David R. Drury is the Bureau Chief of the Bureau of Voting Systems Certification for the Florida Division of Elections. As such, Mr. Drury serves as the team leader in both voting system certifications and auditing. Mr. Drury holds Bachelor degrees in Mechanical Engineering, History and Political Science along with a Masters in Business Administration. Mr. Drury has thirteen years of research, design and development experience with Boeing and GE Aircraft Engines which included computer modeling and an extensive hardware testing background. Mr. Drury earned several "GE Outstanding Achievement Awards" and was nominated for "GE Aircraft Engines Product Quality Award" during 1990 at the Evendale, OH facility. Mr. Drury also acquired experience in the electronics industry while at General Dynamics Tallahassee Operations where he served as a Sr. Industrial Engineer - ISO 9000 Management Representative, and Lead Auditor. During that time, Mr. Drury also served as an adjunct professor at the FAMU - FSU College of Engineering where he taught statistical quality control. Immediately prior to joining state government, Mr. Drury was Director of Quality Assurance for Martin Electronics, Inc. In March 2004, Mr. Drury joined the Bureau of Voting Systems Certification as a Sr. Management Analyst and was promoted to Bureau Chief in December, 2005. Mr. Drury is experienced with process audits, performance audits, and voting system audits.

Danielle Scoggins earned her Bachelor of Science Degree in Management Information Systems from Florida State University's College of Business in 2002. Prior to joining the Bureau of Voting Systems Certification, Ms. Scoggins worked for the Florida Department of Revenue for five years in the SUNTAX program and Internet Service Provider department. During that time Ms. Scoggins gained experience with auditing system reports, establishing user requirements, developing prototypes, testing system integrity, and performing analytical reviews of software requirements and design documents. Additionally, Ms. Scoggins has experience with program planning and evaluation. Ms. Scoggins assumed the Sr. Management Analyst position in March, 2006. Ms. Scoggins' current responsibility is managing the functional test activities during certification events.

Richard Harvey holds a Bachelors degree from Florida State University. Mr. Harvey joined the Division of Elections in 2004 working with voter registration and voter assistance groups. Mr. Harvey was promoted in 2005 and again in 2006 to a Government Operations Consultant position. Mr. Harvey is responsible for reviewing and maintaining voting system acquisition filings, reviewing voting system applications, and researching new technology voting systems. Mr. Harvey has considerable experience with precinct tabulation devices and is considered a

Precinct Equipment Specialist. Mr. Harvey provides technical support to Florida's 67 counties and has conducted training classes on the various precinct voting equipment. Mr. Harvey is a member of the Florida voting system certification test team.

Rosetta Cade has a Bachelors degree in Computer Information Systems with a background in MS Windows 2000 and XP. During her college years, Ms. Cade was involved with software development, network administration and troubleshooting system problems. Upon graduation, Ms. Cade worked for the Florida Department of Management Services and worked as a computer system specialist at the Florida Department of Health. In that position, Ms. Cade was responsible for configuring new and existing systems and maintaining the test database. Ms. Cade joined the Bureau of Voting Systems Certification in May 2006 and is a member of the voting system certification test team. Ms. Cade's primary responsibility is focused on the election management system software.



STATE OF FLORIDA
DEPARTMENT OF STATE

JEB BUSH
Governor

SUE M. COBB
Secretary of State

November 16, 2006

The Honorable Kathy Dent
Sarasota County Supervisor of Elections
101 South Washington Blvd.
Sarasota, FL 34236-6940

Dear Supervisor Dent:

Now that Judge Economou has cleared the way for the state's audit to proceed, we will determine when to reschedule parallel testing. In the meantime, in the interest of maintaining a transparent, fair and meaningful process, our experts will continue interacting with outside experts and experts made available by the candidates.

Division of Elections staff will coordinate with you and your staff to arrange a time for parallel testing after the recount process is complete. As the audit will be conducted in an open and public manner, once a parallel testing date is determined, we will provide sufficient advance notice to the public in order to allow interested parties to observe.

We appreciate your continued cooperation and commitment to this process.

Sincerely,

Sue M. Cobb

Sue M. Cobb
Secretary of State

Appendix B

Audit Plan

BVSC provided the following audit plan to the Supervisor of Elections:

Audit Plan
Sarasota County Florida (November 13 - TBD, 2006)

Note: This audit plan may change in response to the in-process audit findings. Activities that require access to the deployed equipment will be performed upon completion of the recount process.

Opening meeting

- Purpose and scope
- Team introduction
- Available resources
- Audit transparency
- Audit overview
 - Examination of the precinct count equipment
 - Examination of the central count equipment
 - Verification of the election management system (ES&S Unity Voting System) software
 - Examination of the Sarasota County's elections security procedures and activities
 - Parallel tests (*simulations of election day voting*)
 - Closeout meeting

Precinct Count Examination

Obtain the following:

- Precinct list
 - List of voting devices at each precinct
 - Equipment tracking logs for election media / equipment
 - Zero and results tapes for all the voting devices (original and recount)
 - Number of spoiled ballots that occurred at each precinct, if any
 - Number of provisional ballots issued at each precinct, if any

Examine precinct voter rolls

- Manually count number of voter signatures

Examine precinct zero tapes

- Verify counters are zero
- Note the time/date stamp & signatures

Examine precinct results tapes

- Verify the public count from the protective counts using the zero and results tapes
- Note the time/date stamp & signatures on the results tape

Examine precinct results and precinct voting equipment

- Select at least 45 DREs used during election day and obtain their ballot image reports
(*This selection TBD based on precinct demographics and magnitude of 13th Congressional District undervote*)
 - Manually count the number of votes for the 13th Congressional District race from the ballot image report
 - Determine the number of undervotes for this race
 - Compare the observed 13th Congressional District undervote total to the results tape
 - Manually count the number of votes for additional randomly selected contest/candidates
 - Manually count the number of ballots cast
 - Obtain the event logs for the selected DREs and manually count the number of ballots cast
 - Verify the ballot count from the event logs, the ballot images, and the results tapes match each other
- Sum the total ballots cast from the results tapes for each precinct
 - Compare the precinct ballot totals with the totals from the precinct voter rolls
 - Compare the precinct ballot totals with the reported totals from the Election Reporting Manager (ERM)

Repeat the above activities for early voting except sample size to be at least 2 DREs

Examine the precinct voting equipment

- Download the EEPROM .bin files from each of the selected DREs
- Examine the EEPROM files for any evidence of disagreement between the redundant memory chips

Extract the firmware .bin file from one of the selected DREs
*(*The following activities to be performed at Division of Elections in Tallahassee, FL)*
 *Obtain the firmware EEPROM .bin file from the Division of Elections' 12th DRE
 *Hash the .bin file segment that contains the firmware for both voting devices
 *Compare the hash results to verify the installed firmware
 Perform an independent source code review of the firmware
(The independent review will be performed by TBD)

Central Count Examination by precinct, if time permits
 Manually count the number of acceptable absentee ballot signatures
 Manually count the number of acceptable absentee ballots
 Compare the signature count to the absentee ballot count
 Manually count the votes for the 13th Congressional District from at least one precinct.

ES&S Unity Examination
 Obtain a directory listing of the Unity server and workstations
 Obtain a copy of the registry
 Obtain a copy of the operating system logs and the Unity log files
 Obtain screen shots of each Unity module's settings
 Examine the ERM precinct results reports and compare with the manual counts
 Compare the precinct election day totals, provisional totals, and absentee totals
 Perform a SHA-1 hash of the installed static files on the server and workstation
*(*The following activities to be performed at DOE/Tallahassee)*
 *Compare the hash message with the hash message of the installed State certified software
 *Examine the registries and system logs

Security Procedures and Work Instructions
 Examine the security procedures
 Examine the work instructions and relevant objective evidence (e.g., logs, inventory, seals, etc.)
 Examine the conduct of elections report
 Compare the conduct of elections with the documented procedures/work instructions
 Examine the reported issues concerning the precinct devices
 Examine the security camera video tapes and access logs

Perform the first of two parallel tests by performing the following:
(Note: This first parallel test will be performed as soon as possible. However, the actual DREs that were deployed on election day will not be available until after the recount process is complete. A second parallel test will be performed utilizing the DREs that were deployed on election day once these devices become available.)
 Identify four DREs that were deployed on election day
(This selection TBD based on precinct demographics and magnitude of 13th Congressional District undervote)
 Select four DREs that were not deployed on election day
 Program PEBs and election media to reflect the election definition/parameters of the deployed DREs
 Obtain the event log and ballot image report for each of the deployed DREs
 Prepare the test scripts based on the ballot images
 Prepare a time-line for casting ballots based on the event log for each deployed DRE
 Obtain four video cameras / recorders
 Organize four two-person teams with each team assigned to a DRE
(One person to enter votes and one person to verify vote selection and verify the review page)
 Determine optimal setup of the video cameras / recorder for each DRE and team
(Video image should clearly display the entire touch screen surface without obstruction during the voting process)
 Clear the PEBs, election media, and DREs
 Perform the following at the start of the designated test day:
 Start video recording
 Set the date to November 7, 2006
 Set the DREs for election mode
 Open the polls at the indicated time and obtain the zero tapes
 Select candidates/positions per the test script
 For the undervoted 13th Congressional District race perform the following:
 Randomly select one or the other candidate or neither
 Compare this selection with the review screen and document
 Change the selection to match the test script

Examine the review screens to verify its contents match the script based on the ballot image
 Cast ballot at the designated time
 Document any discrepancy and/or deviation from the test script
 Repeat for each ballot cast on election day
 Close the polls at the indicated time and obtain the results tapes
 Terminate video recording
 Resolve discrepancies (if any)
 Summarize finding(s) and observations

Perform the second parallel test once the deployed DREs become available by performing the following:

Select four DREs that were deployed on election day
(This selection TBD based on precinct demographics and magnitude of 13th Congressional District undervote)
 Obtain the same PEBs and election media that were used with these DREs
 Obtain the event log and ballot image report for each of the deployed DREs
 Prepare the test scripts based on the ballot images
 Prepare a time-line for casting ballots based on the event log for each DRE
 Obtain four video cameras / recorders
 Organize four two-person teams with each team assigned to a DRE
(One person to enter votes and one person to verify vote selection and verify the review page)
 Determine optimal setup of the video cameras / recorder for each DRE and team
(Video image should clearly display the entire touch screen surface without obstruction during the voting process)
 Clear the PEBs, election media, and DREs
 Perform the following at the start of the designated test day:
 Start video recording
 Set the date to November 7, 2006
 Set the DREs for election mode
 Open the polls at the indicated time and obtain the zero tapes
 Select candidates/positions per the test script
 For the undervoted 13th Congressional District race perform the following:
 Randomly select one or the other candidate or neither
 Compare this selection with the review screen and document
 Change the selection to match the test script
 Examine the review screens to verify its contents match the script based on the ballot image
 Cast ballot at the designated time
 Document any discrepancy and/or deviation from the test script
 Repeat for each ballot cast on election day
 Close the polls at the indicated time and obtain the results tapes
 Terminate video recording
 Resolve discrepancies (if any)
 Summarize finding(s) and observations

Closeout Meeting
 Issue the audit report

Appendix C

Parallel Test Summary Report



FLORIDA DEPARTMENT *of* STATE

Division of Elections

**Parallel Test Summary Report
for
Sarasota County, FL**

**November 7, 2006 General Election
Using
Election Systems and Software, Inc.
Unity Version 4.5, Version 2**

December 18, 2006

Prepared by:

Bureau of Voting Systems Certification

drd/

**Parallel Test Summary Report
for
November 7, 2006 General Election held in Sarasota County, FL
using
Election Systems and Software, Inc.
Unity 4.5 Version 2
Audit location: Sarasota, FL
Test Dates: 11/28/06 to 12/01/06**

EXECUTIVE SUMMARY:

Florida Division of Elections conducted two parallel tests of the iVotronic touchscreens in an effort to replicate the undervote count observed for the 13th Congressional District race during the November 7th, 2006 General Election held in Sarasota County. The parallel tests focused on the iVotronic touchscreen's ability to accurately record a voter's selections as presented to the voter on the touchscreen's ballot review pages. In addition, the parallel tests also examined various complaints regarding a voter's ability or difficulty in making his or her vote selections.

Bureau of Voting Systems Certification (BVSC) identified four touchscreens to examine, one each from four precincts selected by the Jennings and Buchanan organizations (two precincts each) plus a fifth touchscreen to be used for ad hoc testing. Sarasota County Elections Staff provided BVSC with the election day ballot images and event logs for the five selected touchscreens. BVSC utilized these records to develop the test scripts (i.e., the number of ballots to cast, the vote selections for each ballot, and the timeline for casting the ballots.) BVSC designed the test scripts to accomplish two objectives: to replicate election day with respect to the ballots cast and the frequency of use for each machine (except the ad hoc unit) and to identify any latent issues with respect to making a vote selection. However, the selected touchscreens did not become available for testing until December 1, 2006. Therefore, the first of the two parallel tests utilized five touchscreens from the pool of touchscreens that were not deployed during this election. This pool of touchscreens is the same election-ready units that were available as replacement units during this election.

Division of Elections (DOE) conducted the first parallel test on November 28, 2006 and the second parallel test on December 1, 2006. The second parallel test utilized the five selected units that were deployed on election day. The first parallel test results were compared to the expected election day results with reconciliation of the differences taking place during November 28th and 29th, 2006 in the presence of technical representatives from both the Jennings and Buchanan organizations and the media. All the vote differences experienced during this test were the result of two script errors and eight vote selections that were not entered according to the test script. The second parallel test results were reconciled on December 5, 2006 in the presence of the Jennings' technical representative and the media. The technical representative for the Buchanan organization was not present. All the vote differences experienced during this test were the result of one incorrectly documented vote selection for the ad hoc machine and two vote selections that were not according to the test script. In addition, a review of both parallel test videos did not identify any latent issues with respect to making a vote selection.

In summary, the test results show that the iVotronic touchscreens accurately captures the voter's selection as presented to the voter on the review screens. These tests did not identify any latent problems with respect to vote selection or the accuracy of the touchscreens' tabulation of the votes as cast.

BACKGROUND:

Sarasota County, Florida experienced an unexpected number of undervotes for the 13th Congressional District race during the 2006 General Election. Although a number of factors may have contributed to this undervote total, interested parties are concerned that the undervote for this race suggests that the voting equipment may not have correctly captured the voters' selection.

In response to the Sarasota County Supervisor of Elections' request and at the direction of the Secretary of State, the Division of Elections (DOE) developed an extensive audit plan to ascertain if a process, definition, machine, or tabulation anomaly contributed to this contest's undervote total. As part of DOE's audit, BVSC utilized a test activity known as a "parallel test." Typically, a parallel test involves a random selection of voting devices from the population of voting devices destined for deployment on election day. This test sample would be segregated from the actual deployed devices, but otherwise would undergo the same election day activities in "parallel" with the deployed voting devices, except the voters would consist of a test team and the ballots cast would be defined by a predetermined test script. The intent of this parallel activity is to ascertain the accuracy and reliability of the deployed voting devices with consideration given to ballot style, layout, coding, demographics, and operation.

OBJECTIVE and SCOPE:

The application of the parallel test technique for this audit deviated from the classical parallel test in that the test scripts were based on the audit data extracted from a sample of iVotronic touchscreen devices. In addition, the test script also took into consideration the voting experience of several voters that were described in various news articles. Because documents describing voter complaints were not available for review, DOE relied solely on the published accounts bearing in mind that some of these accounts actually verified the voter's acknowledgement to undervote the 13th Congressional District race.

The audit data for the iVotronic touchscreen consists of two records: the event log and the ballot image file. The event log contains the timing element for each ballot cast. The ballot image file contains the voter selections as they appeared on the review screen at the time the voter pressed the "VOTE" button. However, the arrangement of the ballot images is random. Therefore, these ballot images cannot be associated with the time that the ballot was cast.

BVSC requested each candidate to provide a list of two to four precincts that they believed warrant close examination. From this list of precincts, BVSC staff identified four iVotronic touchscreens (two from Jennings' list and two from Buchanan's list) that experienced the highest undervote within their respective precinct. This selection should enhance the probability of revealing the undervote anomaly should it exist. BVSC personnel then developed a test script from the audit data extracted from each of these machines. The four iVotronic touchscreens and their precinct are:

iVotronic SN #	Precinct	Precinct selected by:
V0105192	105	Jennings' organization
V0106437	118	Jennings' organization
V0117973	76*	Buchanan's organization
V0106866	113*	Buchanan's organization

* Note: The Buchanan organization recommended a random selection. BVSC performed this random selection utilizing MS Excel. The Jennings' organization also identified precincts 117 and 31 in their initial selection and later added precincts 44 and 74.

TEST PREPARATION:

BVSC conducted two parallel tests each consisting of four iVotronic touchscreens that followed a predetermined test script and a fifth iVotronic machine that underwent an ad hoc vote selection process focused on the 13th Congressional District race. BVSC developed the test scripts based on the event log and ballot images from the four iVotronic touchscreens identified above. The first parallel test utilized a random selection of touchscreens from the pool of touchscreens that were not deployed during the general election. This pool consisted of six non-ADA touchscreens and eighteen ADA touchscreens. An ADA touchscreen is identical to a non-ADA touchscreen except that the ADA touchscreen has an optional audio ballot capability and includes a three-button voter interface just below the touchscreen. Sarasota County has no restriction regarding the utilization of an ADA touchscreen for regular voting. Thus, such a device may be used by a vision impaired voter as well as those voters that do not require the ADA enhancement. BVSC included an ADA touchscreen in this first parallel test based on this information and the limited number of non-ADA units that were in the pool of units that were not deployed during this election. BVSC selected one ADA iVotronic touchscreen and four non-ADA iVotronic touchscreens from this pool. The one ADA touchscreen and three non-ADA touchscreens were tested using the predetermined scripts and the remaining touchscreen served as the ad hoc test article. The ad hoc test script was a random vote pattern along with a specific vote pattern for the 13th Congressional District race, all of which was documented by a second individual on preprinted blank sample ballots. The ad hoc tester randomly selected a vote pattern from ten predetermined vote patterns for the 13th Congressional District race for each ballot cast. BVSC tabulated the ad hoc votes that were manually recorded on the sample ballots and compared the totals with the tabulated results that were printed from the ad hoc unit. The election night results for the selected deployed touchscreens served as the baseline results for comparison with the first and second parallel test results.

The five non-deployed touchscreens selected for the first parallel test are:

iVotronic SN #
V0105917
V0106549
V0106923
V0105124
V0106978 (ADA)

The second parallel test utilized the four actual iVotronic touchscreens deployed on election day plus a fifth touchscreen from precinct 117 (SN # V0106366) for the ad hoc exercise. An alternate consideration was precinct 31 (SN # V0106117) which served as a backup test unit should one or more touchscreens fail during the second parallel test. For the second parallel test, BVSC used the same master personalized electronic ballots (PEB), poll worker activated PEBs, and compact flash cards that were used by these machines on Election Day.

AD HOC Vote Patterns:**Vote Pattern B-1**

Select Jennings the first time the race is presented to the voter.
 Return to the race from the review screen after all other selections are made by paging back and change final selection to Buchanan.
 Verify Buchanan is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern B-2

Select Jennings the first time the race is presented to the voter.
 Return to the race directly from the review screen after all other selections are made and change final selection to Buchanan.
 Verify Buchanan is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-1

Select Jennings the first time the race is presented to the voter.
 Return to the race from the review screen after all other selections are made by paging back and verify selection is still Jennings.
 Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-2

Select Jennings the first time the race is presented to the voter.
 Return to the race directly from the review screen after all other selections are made and verify selection is still Jennings.
 Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-3

Select Buchanan the first time the race is presented to the voter.
 Return to the race from the review screen after all other selections are made by paging back and change final selection to Jennings.
 Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-4

Select Buchanan the first time the race is presented to the voter.
 Return to the race directly from the review screen after all other selections are made and change final selection to Jennings.
 Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-5

Do not make a selection the first time the race is presented to the voter.
 Return to the race from the review screen after all other selections are made by paging back and change final selection to Jennings.
 Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-6

Do not make a selection the first time the race is presented to the voter.
 Return to the race directly from the review screen after all other selections are made and change final selection to Jennings.
 Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern U-1

Select Jennings the first time the race is presented to the voter.
 Return to the race from the review screen after all other selections are made by paging back and change final selection to an undervote.
 Verify an undervote is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern U-2

Select Jennings the first time the race is presented to the voter.
 Return to the race directly from the review screen after all other selections are made and change final selection to an undervote.
 Verify an undervote is the selection indicated on the review screen prior to casting the ballot.

Note: Vote pattern J-4 was in error for the first parallel test. The first instruction "Select Buchanan..." actually stated "Select Jennings...." BVSC corrected the vote pattern (correct version shown above) for the second parallel test.

ELECTION SETUP:

DOE conducted the parallel tests at Sarasota's Interim Government Operations Center (IGOC) located at 1001 Sarasota Center Blvd in Sarasota, Florida. The setup for both parallel tests involved placing the 12 inch iVotronic touchscreen in a vertical orientation mounted on a modular wall unit. This wall unit is in a small room located in the Sarasota Elections storage facility within the IGOC. That room served as the test area and contained windows on two parallel sides with the modular wall being located below the windows on one side. This allowed the public to witness the test team's interaction with the touchscreens from the opposite set of windows. This arrangement also facilitated video taping the test and the observations by the designated representatives from both the Jennings and Buchanan organizations. A video production company utilized five cameras w/monitors to record the testing with one camera/monitor devoted to each touchscreen. Sarasota election staff also located two additional wide screen monitors in the public viewing area. Thus, the public was able to observe all five monitors located in the test area along with the two large monitors in the public area and also directly observe the interactions of the test team with the touchscreens. Two members of the test team were positioned to one side of each touchscreen. One team member made selections per the test script or randomly voted on the ad hoc unit while the second team member documented the actions taken. The test team consisted of twelve volunteers from the Division of Elections, ten of which were located in the test area and the remaining two serving as rotating replacements. The majority of the volunteers did not have any prior experience with touchscreens. BVSC staff gave the test team a brief 15 minute orientation just prior to beginning the first parallel test. In addition, the test team had no prior test experience as evidenced by its lack of documentation and note taking during the first parallel test. Based on the constructive feedback provided by the Jennings organization and the experience gained from the first parallel test, the test team substantially improved its test documentation during the second parallel test.

The iVotronic serial numbers, test script identification, and camera position were as indicated below:

1st Parallel Test -- Tuesday November 28, 2006

Non-deployed		
iVotronic Sn #	Camera #	Script based on Precinct # / (iVo Sn #)
V0105917	1	n/a <i>ad hoc test script</i>
V0106549	2	105 / (V0105192)
V0106923	3	118 / (V0106437)
V0105124	4	113 / (V0106866)
V0106978 (ADA)	5	76 / (V0117973)

2nd Parallel Test -- Friday December 1, 2006

Deployed		
iVotronic Sn #	Camera #	Precinct
V0106366	1	117 <i>ad hoc test script</i>
V0105192	2	105
V0106437	3	118
V0106866	4	113
V0117973	5	76

Key Elements:

A number of media reports described problems that several Sarasota voters encountered in making their selections and/or in making corrections to their selections as presented on the review screens. BVSC utilized the test scripts and the ad hoc script to replicate the published anomalies. Although a number of these voters indicated a problem with their initial and final selection for the 13th Congressional District race, the primary focus of the parallel tests is the review screens. The review screens present the voter with the voter's selections. It is this review screens' list of voter selections that the iVotronic records when the voter presses the "VOTE" button to cast the ballot. Therefore, the primary question concerning the accuracy of the iVotronic touchscreen is whether the review screens as presented to the voter and ultimately verified and cast by the voter is in fact what was stored as the ballot image. All other issues involving the vote selection process do not alter the fact that it is the selections that are presented on the review screens that are ultimately cast and tabulated. Thus, a review screen that shows a selection for any candidate and/or measure that is not captured in the ballot image is a machine error. Likewise, any review screen that does not show a selection that is captured within the ballot image is also a machine error. The vote selection process does not capture that selection as a vote until the voter advances through all the review pages and has had an opportunity to observe the voter's selections. Then, and only then, will the vote button become enabled and allow the voter to cast their ballot. Upon reaching the review screen, an undervote is visually presented to the voter as "No selection made" and with the contest checkbox left empty. A third visual report is provided on the non-ADA touchscreens with the "No selection made" in a red text on a white background.

Results:

The initial results from the first parallel test noted the following:

1st Parallel Test -- Tuesday November 28, 2006

Non-deployed iVotronic Sn #	Script	Variance	Resolution
V0105917	<i>ad hoc test script</i>	None	
V0106549	V0105192	1 extra vote for Jennings 1 less undervote 1 extra vote for Carusone 1 less vote for Klos	Ballot 40, Undervote was voted for Jennings Cause is same as noted for ballot 40 Ballot 35, Vote for Klos was cast for Carusone Cause is same as noted for ballot 35
V0106923	V0106437	3 extra votes for Jennings 3 less undervotes	Ballot 2, Undervote was voted for Jennings Ballot 4, Undervote was voted for Jennings Ballot 6, Undervote was voted for Jennings Causes are same as noted for ballots 2, 4, and 6
V0105124	V0106866	1 extra vote for George 1 less vote for Phillips 1 extra YES vote 1 less undervote	Ballot 67, Vote for Phillips was scripted for George Cause is same as noted for ballot 67 Ballot 5, An undervote was scripted as a Yes Cause is same as noted for ballot 5
V0106978	V0117973	1 extra vote for Jennings 1 less undervote 1 extra undervote 1 less vote for Campbell	Ballot 30, Undervote was voted for Jennings Cause is same as noted for ballot 30 Ballot 34, Vote for Campbell was cast as an undervote Cause is same as noted for ballot 34

2nd Parallel Test – Friday December 1, 2006

Non-deployed iVotronic Sn #	Script	Variance	Resolution
V0106366	<i>ad hoc test script</i>	1 extra Yes vote	Ballot 44, Recorded Yes vote on pdf when actual vote was No Cause is same as noted for ballot 44
		1 less No vote	
V0105192	V0105192	1 extra vote for Crist	Ballot 19, Vote for Davis was cast for Crist Cause is same as noted for ballot 19
		1 less vote for Davis	
V0106437	V0106437	1 extra vote for Campbell	Ballot 47, Vote for McCollum was cast for Campbell Cause is same as noted for ballot 47
		1 less vote for McCollum	
V0106866	V0106866	None	
V0117973	V0117973	None	

As noted above, both parallel tests were successful in demonstrating 100% accuracy in recording the vote selections as indicated on the review screens. There were no unresolved anomalies. In addition, attempts to replicate the published reports concerning voter difficulties in making or changing their vote selections did not materialize during this test.

Conclusion:

This series of parallel tests demonstrated that the iVotronic touchscreens did not exhibit pervasive malfunctioning. There are no indications of machine bias or otherwise voting machine faults that would yield rejected legal votes. The claims made that votes were lost due to touchscreen malfunction are not supported by the results of this test. In addition, statistical analysis of the undervote for the 13th Congressional District race may not be a good indicator of a voting machine undervote anomaly. Consider the countywide races for Sarasota County Review Board (Districts 1, 2, 3, 4 and 5) and the Hospital Board Southern District Seat race. If one were to give similar considerations that were used to analyze the 13th Congressional District race in an analysis of the countywide races one would note that these six races exhibited nearly identical percent undervotes except for the Review Board District 2 race where the undervote is over 7% higher representing nearly 10,000 additional undervotes. Examination of the ballot images provides some clues as to voting patterns. All six races had two candidates, one Republican listed first and one Democrat, except the Review Board District 2 race which had an NPA candidate instead of a Democrat. BVSC noted when building the test scripts that a large number of voters that tended to vote a Democratic ballot chose to either vote for the Republican candidate or undervote the contest rather than vote for the NPA candidate. The voters that tended to vote a Republican ballot were largely consistent with their Republican choices for county-wide races. Thus, voting patterns with respect to candidate preference does appear to be a factor that needs consideration in any statistical analysis of the 13th Congressional District race.

Furthermore, criticisms that the test arrangement and/or the test team makeup influenced the accuracy of the touchscreens are unfounded. The purpose of this test is to determine whether the iVotronic touchscreens encountered pervasive malfunctioning or irregularities that contributed to the observed undervote count for the 13th Congressional District race. The unit's orientation, the voter's demographics, and all other external factors may contribute to the voter's and/or the touchscreens ability or inability to make vote selections. However, the process of selecting one's choices is not a measure of the voting device's accuracy. Accuracy is relevant to the information presented to the voter on the review screens and ultimately captured as a ballot cast upon a positive action by the voter after that voter has advanced to all the review screens and after making any desired changes to the

vote selections. The sample size for these tests, a total of ten test units, is more than adequate to identify any machine malfunctions, faulty machines, machine bias or irregularities that could have contributed to the observed undervotes for this race. In summary, there is no evidence to support the position that the iVotronic touchscreens caused votes to be lost.

Appendix D

Audit Documentation Inventory

(Items comprise the public records associated with this audit
with noted applicable exemptions)

<u>File Folder & Contents</u>	<u>Pages</u>
Letters from Division of Elections	19
General iVotronic Custody Logs	166
Observer Sign-in Sheets	25
Tape-Log and Custody Sheets	11
Manual Recount Forms	16
Ballot Custody Batch Log Sheets	44
Provisional (Coded) Ballot Summary	7
Security Procedure (<i>Not a public record</i>)	83
Turnout and Voter History	3
Conduct of Election Report	5
Jurisdictional Canvas	19
ERM Summary Report with Group Detail	16
Audio/Video Purchase Order	11
Parallel Test Communication	8
Parallel Test Custody Logs	25
Ballot by Style	15
1. Sample Ballot	
2. CD - Event Log & Ballot Image PDF Files	
3. Sample Ballot Style 3	
4. Ballot Style List	
Legal Filings – Case No. 2006 CA 2973 & 06 CA 2996	21
Audit Plan	3
News Articles	23
Zero and Results Tapes (11/28/2006)	60
- 15 Tapes (4 pages legal size paper per Tape)	
Zero and Results Tapes (12/01/2006)	60
- 15 Tapes (4 pages legal size paper per Tape)	
Ballot Image Log	156
Parallel Test Plan	5
Zone Tech Log Sheets	16
11/28/06 Test Results	25
12/01/06 Test Results	26
Event Logs for Sn # 105192, 106437, 106866, & 117973	6
11/28/06 Test Script for ad-hoc touchscreen from Precinct 117	92
11/28/06 Test Script for touchscreen from Precinct 105	55
11/28/06 Test Script for touchscreen from Precinct 118	80
11/28/06 Test Script for touchscreen from Precinct 113	76
11/28/06 Test Script for touchscreen from Precinct 76	40
Precinct Protective and Public Counts	163
- Precinct I-156 & Early Voting	
Precinct Register Reconciliation	20

- 131 Slips	
12/01/06 Test Script for ad-hoc touchscreen from Precinct 117	94
12/01/06 Test Script for touchscreen from Precinct 105	57
12/01/06 Test Script for touchscreen from Precinct 118	80
12/01/06 Test Script for touchscreen from Precinct 113	76
12/01/06 Test Script for touchscreen from Precinct 76	40
Canvassing Board Minutes for November 7, 2006	4
M650 Configuration Report printouts	4
Unity System Logs and Screen Shots	2 CD
Parallel Test Image and Event Log (11/28/06-12/01/06)	1 CD
46 DRE Ballot Image/Event Log Count	86
General Election Parameters <i>(Not a public record)</i>	1 CD
Firmware Chip Comparison <i>(Not a public record)</i>	23
- 2 CDs <i>(Not a public record)</i>	
iVotronic Firmware Installation <i>(Not a public record)</i>	9
- 1 CD <i>(Not a public record)</i>	
Public Record Requests	6
FSU SAIT Statement of Work	28
Precinct Zero and Early Voting Zero Results Tapes Copies	1392
ES&S CD-13 Background Report	31
Parallel Test Summary Report	18
Incident Reports	1,920
This Audit Report	29
FSU/SAIT Software Review and Security Analysis Report	67
FSU/SAIT Report Appendix E, F, & G <i>(Not a public record)</i>	
DVD for Two Parallel Tests	146 DVD's
Cost per DVD set is \$370.84, <i>(subject to change)</i>	

Appendix E

Acronyms

ADA	Americans with Disabilities Act
BVSC	Bureau of Voting Systems Certification
COTS	Commercial-off-the-shelf
DARC	Sarasota County Elections' Data Acquisition and Recording Center
DOE	Florida Division of Elections
DRE	Direct recording electronic
EEPROM	Electronically erasable programmable read only memory
EQC	Election Qualification Code
ES&S	Elections Systems and Software, Inc.
FSU	Florida State University
HAVA	Help America Vote Act
ITA	Independent Test Authority
L&A	Logic and Accuracy test
PEB	Personalized electronic ballot
M100	ES&S Model 100 precinct optical scanner
M650	ES&S Model 650 high speed central count optical scanner (for absentee ballots)
PRF	Sarasota County Elections' Poll Worker Report Form
SAIT	FSU's Security Analysis in Information Technology laboratory
SR-1	Service Release 1 is an update to Unity's Election Reporting Manager (ERM) that allows sorting of ballot images that contain an undervoted universal primary contest (UPC).
UPC	Universal primary contest. The UPC is unique to Florida's closed primary elections and occurs when an office up for election has only one political party with a slate of candidates and that race's winner will go unchallenged during the general election. Under these conditions, this district race appears on all the relevant primary ballots, thus allowing cross-party voting for this race in a closed primary election.
Unity	ES&S's election management system that is composed of the Election Data Manager (EDM), the ballot image manager for ES&S scanners (ESSIM), the Hardware Programming Manager (HPM), the optional Data Acquisition Manager (WDAM), the optional iVotronic image manager (iVIM), and the Election Reporting Manager (ERM).
VEF	Sarasota County Elections' Voting Equipment Facility

**Software Review and Security Analysis of the ES&S iVotronic
8.0.1.2 Voting Machine Firmware**

**Alec Yasinsac David Wagner Matt Bishop Ted Baker
Breno de Medeiros Gary Tyson Michael Shamos Mike Burmester**

**Security and Assurance in Information Technology Laboratory
Florida State University
Tallahassee, Florida
February 23, 2007**

**Final Report
For the Florida, Department of State**

Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware

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Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware Final Report

1 Executive Summary

On December 15th, 2007 the Florida Department of State (FLDoS) commissioned an independent expert review of the ES&S iVotronic 8.0.1.2 firmware, as documented in the Statement of Work [1]. The team, led by Florida State University's (FSU) Security and Assurance in Information Technology (SAIT) Laboratory, was commissioned to conduct a static software code review as part of the state's audit of the 2007 Florida Congressional District 13 (CD13) election between candidates Vern Buchanan and Christine Jennings. This report is the culmination of that review.

1.1 Administrative Overview

This report describes the findings after an intensive analysis. The subject code was delivered to the review team and active preparations began the day the statement of work was signed. Outside code review members arrived in Tallahassee within three days and intensive code review commenced. A relatively large team, whose members were chosen because of their complementary skill sets, performed the review. SAIT Laboratory members bring strong theoretical and applied information security and electronic voting credentials. Two non-SAIT FSU Computer Science faculty members contribute computer architecture, compiler, and hardware interface expertise. Three outside members with distinguished records in secure software, voting system security, and code review round out the team.

1.2 The Analysis' Scope

Our investigation was limited to the scope specified in the Statement of Work:

The sole purpose of this project is to conduct a scientifically rigorous static software analysis on the iVotronics version 8.0.1.2 firmware source code to determine and identify flaws, vulnerabilities or anomalies, if any, that may have potentially caused, contributed or otherwise created the higher than expected under-vote rate in the District 13 Race. [1]

We focused our efforts on finding voting machine software problems that may have contributed to the CD13 undervote. We received all requested access to iVotronic terminals, PEBs, elections officials, ballot definitions, development engineers, and documentation. Where we needed additional hardware information to understand the software operation, we were given that data. We methodically examined undervote symptoms and followed the evidence to our findings. We considered possible causes hypothesized in the press and Internet sources, as well as others of our own design. We used standard software tools for manual code review and used static analysis tools to automate some of the analysis. In accordance with our plan, the team worked together throughout the intense code review cycle, cross-checking and corroborating hypotheses and findings. We documented our findings during the course of our work, and referred to our daily notes as we prepared this report. While there are no guarantees in this type of analysis of a system as complex as the iVotronic, we examined all aspects of the software that we believed may have contributed to the CD13 undervote.

1.3 Findings Summary

The team's unanimous opinion is that the iVotronic firmware, including faults that we identified, did not cause or contribute to the CD13 undervote. We base this opinion on hundreds of hours of manual code review complemented by automated static analysis and extensive study of the problem symptoms and the execution environment. We traced program execution from terminal

Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware

initialization, through voter selection, to ballot image creation, to ballot image collection. We also investigated the possibility of asynchronous system faults not associated with any particular phase of voting. Our investigation provided no evidence that an iVotronic software malfunction caused or contributed to the CD13 undervote.

We do not claim that these results extend beyond the scope of our investigation. We emphasize that these findings are neither an endorsement nor a repudiation of the iVotronic, the larger class of Direct Recording Equipment (DRE) systems, nor any other form of electronic voting system. We specifically do not contend that these systems are correct or secure beyond the specific opinions that we give herein. This report is concerned solely with the question posed to us regarding the cause of the CD13 undervote in Sarasota County in November, 2006, and we do not claim that these results extend to a broader context.

2 Project Introduction and Background

2.1 Report Organization.

This document represents the total project report. It contains all of our pertinent findings and conclusions and the technical analysis that supports these conclusions. The document is written in two parts. The public part (Sections 1-12 and Appendices A, B, C, and D) constitutes the public report in its entirety; it contains our findings and the analysis to support these findings and is intended for public dissemination. In accordance with the terms of the Statement of Work, we have avoided revealing proprietary information in the public part of the report, and we are careful to avoid revealing information that would describe how to attack an election. The public report stands on its own and reflects the totality of our findings regarding the CD13 undervote.

The private part consists of Appendix E (Non-Pertinent Flaws), Appendix F (Analysis of Anomalous Audit Log Messages Regarding Voter PEBs), and Appendix G (Anonymization of cast vote records in the ES&S iVotronic 8.0.1.2 firmware). Appendices E and F are confidential, as required by the Statement of Work, because they contain vendor-proprietary information; also, Appendices E and G are confidential, as required by the Statement of Work, because they contain information about potential defects that could not have caused or contributed to the CD13 undervote and thus that are not relevant to this investigation. We are providing Appendices E, F and G to the state to allow the state to thoroughly evaluate the iVotronics and to pass on pertinent information to the vendor that will facilitate future improvements to these voting systems.

As indicated in the Statement of Work, we provided some details to the FLDoS and the vendor during the course of our work. We emphasize that the public part of this report contains everything we learned during this review that is relevant to the CD13 undervote.

The main document first gives background information about the undervote observed in the CD 13 race, the investigation, the voting system, and our assumptions. We follow these by describing our findings and conclusions.

2.2 The Software Review Team

2.2.1 The Senior Investigators

2.2.1.1 Ted Baker. Dr. Baker is a Florida State University Professor of Computer Science. For thirty years he has conducted systems-related research and taught hundreds of technical classes regarding machine interactions. He is an expert in device drivers and hardware-software issues.

2.2.1.2 Matt Bishop is a Professor of Computer Science at the University of California at Davis. He

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is an expert in secure software and electronic voting systems, having participated in several widely recognized electronic voting software systems code reviews. His computer security textbook, *Computer Security: Art and Science*, is the acknowledged benchmark against which all others related to this topic are measured.

2.2.1.3 Mike Burmester is an FSU Professor of Computer Science and a co-Director of (SAIT) Laboratory. He is a renowned expert in information security and cryptography, with over thirty year's research experience in computer security related issues.

2.2.1.4 Breno de Medeiros is a Florida State University Assistant Professor of Computer Science. He is an Information Security expert with extensive software experience.

2.2.1.5 Michael Shamos is Distinguished Career Professor of Computer Science at Carnegie Mellon University. He has performed over 115 electronic voting certification examinations for six states, including Pennsylvania and Texas. He frequently testifies before the US Congress and various state legislatures on electronic voting issues.

2.2.1.6 Gary Tyson is a Florida State University Associate Professor of Computer Science. He is an expert in computer architectures and compiler technology.

2.2.1.7 David Wagner is an Associate Professor of Computer Science at the University of California, Berkeley. Like Professor Bishop, he is an expert in secure software and electronic voting systems, having conducted several widely recognized electronic voting software code reviews.

2.2.1.8 Alec Yasinsac is a Florida State University Associate Professor of Computer Science, a co-Director of SAIT Laboratory, and is the lead Principal Investigator on this project.

2.2.1.9 The Statement of Work (SoW) listed Dr. Edward Felten of Princeton University as an initial team member. Dr. Felten made significant contributions to project planning and was invited to participate, but he ultimately did not join the full team.

2.2.2 Team Organization

2.2.2.1 Internal Team Structure and Operation. As detailed in the project plan, six team members (Baker, Bishop, de Medeiros, Tyson, Wagner, and Yasinsac) conducted hands-on code review. Two members (Burmester and Shamos) contributed to project plans, reviewed the process documents, and participated in report preparation. The final report reflects the team's cumulative and unanimous opinion.

2.2.2.2 External Communication and Coordination

2.2.2.2.1 Florida Department of State (FLDoS). As noted in the SoW, FLDoS was entitled to observe the code review process at their discretion; they chose to limit their interaction. FLDoS only interacted with the team at our invitation and they proved to be a valuable information resource, providing precinct reports, election configuration files, general election knowledge, and hardware demonstrations to support our analysis. Their support was consistently prompt and complete. The FLDoS placed no restrictions on our activities within the SoW.

2.2.2.2.2 Florida State University. FSU and SAIT Laboratory hosted the code review and provided invaluable analysis resources and administrative support beginning the first active SoW

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day, extending through the holiday periods (including while the University was officially closed for both the Christmas and New Year's holidays) and into the new year. The spaces were ideal for this type of review and the resources were excellent.

2.2.2.2.3 Election Systems & Software (ES&S). ES&S was an active and effective information resource for this team. Two ES&S iVotronic software developers with intimate knowledge of and experience with the firmware spent one and a half days answering questions and accelerating our understanding of the software structure and flow. We subsequently conversed with these developers by telephone several times.

Additionally, an ES&S hardware specialist met with the team to clarify information and confirm our observations of the hardware architecture and hardware-software interactions. We also had subsequent telephone conversations with other ES&S hardware engineers to answer follow-on questions.

When we sought technical detail, documentation, or clarification, ES&S responded promptly and comprehensively. For example, when we sought compiler information, they provided a listing of source code and the corresponding assembly language side-by-side. These interactions were undoubtedly an important contribution to the project that facilitated our work, accelerated our progress, and heightened confidence in our findings. The vendor offered to provide equipment and resources to allow us to construct proof of concept demonstrations of our hypothesis, but the team declined this invitation. We address specific vendor input and interactions throughout the report.

2.3 The Investigative Process

In accordance with our project plan, the investigation began with a short collaborative planning phase. The team met in the SAIT Laboratory and spent several days examining code, documentation, and symptomatic evidence to understand the problem and to formulate an investigative approach. The resulting plan relied on parallel investigation of reliability and security issues that may have caused or contributed to the CD13 undervote. The team composition provided a natural investigative partitioning. Professors Baker and Tyson focused on hardware interaction, low level software, and architectural issues. Professor Wagner focused on security considerations, Professor Bishop and Professor de Medeiros investigated software faults and security issues, and Professor Yasinsac investigated gap issues not covered by the natural team partitioning. Early in the process we produced an extensive list of scenarios that might have resulted in the observed undervote, and this list formed our investigation to systematically rule out each scenario.

Each code investigator took two complementary research approaches in their specialized area. Each investigator conducted unrestricted code examination. They each spent time analyzing code and following their instincts, with no external limits imposed upon them. This leveraged investigators' analytic strengths and offered the opportunity to reveal subtle or non-intuitive faults.

Additionally, investigators carefully and collaboratively examined evidence and Sarasota-specific symptoms within their areas. Investigators received data from Sarasota that defined the environment, triggered symptom analysis, and validated configuration assumptions. During our investigation, we reviewed problem logs produced on Election Day by Sarasota County poll workers. We also reviewed published studies, press reports, and court proceedings that aided our review. These symptoms led to many observations that constitute the bulk of our findings.

2.4 The CD13 Undervote Details

The CD13 undervote has been the subject of several lawsuits, news articles numbering in the triple digits, and uncounted blog commentaries. While this produced a mountain of information about the

undervote, facts were elusive. We know that there are approximately 18,000 undervotes, which is more than 13% of the total CD13 vote and is three to ten times the average undervote in other races. There is no dispute that this undervote is abnormal and unexpected and that it cannot be explained solely by intentional undervoting.

The FSU team spent many hours investigating election related documents and information and documented many symptoms that might indicate possible causes. Among these, we noted that the abnormal undervote rate was present in both early and Election Day voting, with a higher undervote rate observed during early voting. The Sarasota Supervisor of Elections (SoE) responded to complaints from voters about problems voting in the CD13 race during early voting by asking poll workers to remind voters to review their ballots. The undervote subsequently diminished on Election Day, suggesting that raising heightened voter attention may have reduced the undervote rate. Precinct logs, in which poll workers make notes, show repeated entries that poll workers reminded voters to give special attention to the CD13 race.

Recorded voter complaints also offered information that contributed to the software analysis process. Precinct logs indicate that voters offered three classes of pertinent comments.

1. The voter selected a candidate in the CD13 race, but claimed that the selection did not appear on the summary page.
2. The voter did not notice the CD13 race at all until it was shown as an undervote on the summary page.
3. Many machines responded slowly (five seconds or more) or not at all, to voters' touches.

These three reported symptoms suggested many hypotheses regarding possible software faults. We investigated numerous other reported symptoms as well. For example, during our review of the Sarasota iVotronic event logs (audit logs), we noticed an anomalous event log entry containing the message "Invalid Vote PEB". We hypothesized causes for this event and traced through the code to find its cause, as detailed in our findings below. We similarly traced other symptoms that we discovered through review of evidence and records such as:

- Event logs
- Ballot image files
- Ballot definition files
- Polling place logs
- Newspaper articles
- Court documents, particularly expert reports
- Blog entries
- Standard software flaw guides
- Standard security flaw guides
- Independent Test Authority reports
- Other historical documents

During our work, we analyzed many hypotheses. These activities included exercising iVotronic terminals, testing personal hypotheses, judging touch and display properties, analyzing machine timing and performance characteristics, and confirming configuration assumptions. The team was given two demonstrations of the iVotronic machines, and several team members later had the chance to experiment with iVotronic equipment configured with the ballot style used in Sarasota

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County in November, 2006. We returned to the hardware several times to compare the machine behavior to our analysis of the source code.

2.5 Speculated Causes for the Undervote

Several papers have been written proposing theories about what may have happened in the CD13 race. We present a few representative theories in this subsection. They are not exhaustive, nor are they mutually exclusive. It is theoretically possible that all of these factors contributed, that none of them did, or that any combination of them did.

2.5.1 Machine or Software Malfunction. This is a general category that includes total machine failure; machine problems that created difficulty for voters; and subtle, even undetectable faults that may have contributed to the undervote. Some political and computer science experts have raised the possibility that a software fault or intentional software intrusion may have caused or contributed to the undervote. For instance, computer security and electronic voting expert Dr. Dan Wallace identified a number of hypotheses regarding potential software or system malfunctions that may have led to the CD13 undervote [2]. The FSU team considered Dr. Wallace's hypotheses in our analysis process.

Similarly, in Ms. Jennings' contest to Congress [3], her team hypothesizes that a software error may have interfered with the transfer of information between the volatile memory where votes are stored during the vote selection process and the non-volatile memory where the votes are retained for extraction at poll closing. The team specifically investigated each of the hypotheses mentioned above, as well as others identified by the team, during this investigation.

2.5.2 Voter Discontent. Another possibility is that voter apathy may have contributed to the undervote. Some argue that the negative tone, both in the primaries [4] where reportedly neither candidates' opponents endorsed the eventual winner, and the subsequent bitterly contested general campaign, resulted in voter apathy in this race. A ballot review conducted by a local newspaper in early December [5] and cited by Electionline.org [6] supports the theory that voter apathy may have combined with the ballot design issues and thereby increased the magnitude of the undervote in the CD13 race. The newspaper article quotes one usability expert as suggesting that straight party voters may be looking for party affiliation rather than candidates, and thus may be less likely to realize that they did (or did not) vote for a specific candidate.

An analysis of the election published this week in the Herald Tribune further supports the findings of the Dartmouth study. The newspaper analyzed every vote cast and discovered that loyal party voters — both Republican and Democrat — were largely responsible for the undervote in Sarasota. Nearly 60 percent of the 18,000 undervotes in the race came from voters who otherwise voted along party lines.[5]

Voter discontent does not explain the difference among the undervote percentages in mail ballots, surrounding counties, and the machine recorded votes. It is possible that voter demographics between more and less densely populated areas may account for part of these differences, but it is widely accepted that these factors do not account for all of the difference.

2.5.3 Event 18 Correlation. An academic study of Sarasota event logs [7] revealed a correlation between the undervote rate on specific machines and occurrences of a specific anomalous event in the audit logs for those machines: specifically, the "Invalid Vote PEB" message, which has also been identified as "Event 18" [7]. In the first week of January, before the report had been released, we had noticed the Event 18 messages in the event logs, investigated them, and established that the causes were (1) a software bug that did not affect the recording or tallying of votes for the Voter

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PEB-Normal Ballot anomaly and (2) poll workers taking a specific action for Event 18 variations. The correlation noted in the paper is not due to any fault in the iVotronic firmware. Our detailed findings supporting this are reported in Section 6.2.1.2 below and in Appendix F.

2.5.4 Ballot Design Issues. Ballot design issues represent another possible cause that emerged soon after the election. Many people speculated that placing a race with only two candidates on the same page along with a race that has many more candidates, without a prominent race title block, could distract some percentage of voters. This theory may also explain voter complaints that they "...did not see the Jennings race..." until they noticed it on the summary page. A recent study argues that ballot design issues are the most likely undervote cause [8] in the CD13 race, a result also supported by an informal experiment reported in Electionline.org [6]:

Ted Selker, director of the Caltech/MIT Voting Technology Project, set up voting machines on the MIT campus and asked random people to vote. Selker told the paper that initial results indicate that the two-candidate race is missed 60 percent of the time when it's dwarfed by the list of gubernatorial candidates.

A clearly confusing aspect of the Sarasota ballot is that the first page contained two long headers separated by a straight line, followed by a large, important race. This structure may pre-dispose voters to a pattern of two long headers separated by a line followed by a large race, leaving the CD13 race unnoticed on the second page. Screen shots of these pages are provided in Appendix A.

Another study [7] questions whether the ballot design theory can explain all the undervotes. That study hypothesizes that machine failures associated with the "Invalid Vote PEB" message (Event 18) may have contributed to the high undervote rate. Our analysis and code review conclusively refutes the Event 18 hypothesis, as detailed in our technical findings below. Unfortunately, neither statistical analysis nor code review can conclusively confirm or refute the ballot design hypothesis itself. Our findings are consistent with, but do not confirm, the ballot design explanation.

2.5.5 Age Variations. In December 2006, a Sarasota newspaper conducted an analysis examining the correlation between age and CD13 undervotes [9]. They found that in "...precincts where the median age was greater than 65, the undervote rate in the congressional race was 18 percent, 40 percent higher than in younger precincts." Some suggest that the undervote-age correlation supports the ballot design hypothesis and refutes most machine-related hypotheses since software cannot detect a voter's age. It may also explain the correlation between undervotes and voters associated with one party or the other. We attempted to identify fault hypotheses to explain this correlation, but we were unable to construct any machine-related fault hypotheses that would explain this observed effect.

3 iVotronic Operational Overview

The ES&S iVotronic is a highly configurable voting system. It provides a wide variety of configuration options that can be used to customize its operation according to local requirements. Consequently, many of the iVotronic's configuration options were not exercised in the CD13 race. Here we provide an overview of the iVotronic architectural and operational characteristics, as it was used in the Sarasota County CD13 race.

3.1 The iVotronic Election Process

The iVotronic voting process generally includes the following phases: (1) election generation and setup, (2) preparing Personal Electronic Ballots (PEBs) and removable non-volatile memory cards,

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(3) initializing iVotronic terminals, (4) opening the polls, (5) voting, (6) closing the polls and accumulation, and (7) tabulation. We discuss each of these in the following subsections. While we will discuss some aspects of the iVotronic hardware in this section, we save many details about the hardware for a later section.

3.1.1 Election Generation. This early phase is largely outside the scope of the firmware code review. Our understanding is that the election staff creates the election definition files on the vendor's election management system (called Unity), generates a unique election identification code, defines the contests, and identifies the candidates in each contest. The staff exercises and tests these settings before settling on a final election configuration.

3.1.2 Preparing PEBs and CF Cards. The iVotronic stores and retrieves various data using two easily removable storage devices: the Personal Electronic Ballot (PEB) and a Compact Flash (CF) card. The PEB contains the election definition files produced by Unity for the precinct where the PEB will be used, as well as the election identification code. PEB initialization installs this information on the PEB's non-volatile storage. The CF contains audio files on machines configured for disabled voters (ADA) machines and information to identify the election. All CF cards are loaded with bit-for-bit identical information during the preparation stage. The election staff inventories, initializes, and tests these storage devices between elections, often just a month or so prior to Election Day.

3.1.3 Initializing iVotronic Terminals. Two election initialization operations relative to the iVotronic terminals are: (1) updating the firmware (when necessary) and (2) clearing the on-board memory. Firmware updates do not occur in every election cycle so firmware may persist between elections. The clear and test procedure erases information associated with past elections, initializes the persistent storage on the iVotronic terminals, and prepares the iVotronic terminal for use in the next election.

3.1.4 Opening the Polls. On Election Day, a poll worker opens the polls by inserting a PEB into each iVotronic terminal. This makes the iVotronic terminal ready for voting. A de facto standard practice is to use one PEB (called a "Master PEB") to open all terminals in a polling place. Each polling place has its own Master PEB. Master PEBs are ordinarily not used for anything other than opening and closing the polls; they are set aside, unused, for the rest of Election Day.

3.1.5 Voting. After each voter demonstrates her eligibility to vote and signs the sign-in roster, a poll worker accompanies her to an iVotronic terminal, inserts a PEB into the terminal, responds to an administrator screen (e.g., to select the proper precinct, for early voting or multi-precinct polling places), and then removes the PEB. Thus, the PEB serves the purpose of activating the machine to allow a single voter to cast a single ballot. The voter never handles the PEB. When the poll worker removes the PEB, a voter administration screen appears and the voter selects her desired options (e.g., the language in which to view the ballot). When the terminal displays the ballot, there are only two valid voter actions until the voter reaches the final summary page: (1) select or deselect one or more candidates on the page, or (2) page right or left (meaning to move forward or backward, respectively, through the ballot). Once the voter reaches the final summary page, she has three options: (1) select a race to re-vote, (2) page right or left, or (3) cast the ballot. The voter may cast her ballot any time after reaching the final summary page.

Some iVotronic terminals provide extra features designed to enhance their accessibility. These machines are known as ADA-capable terminals; the acronym refers to the Americans with Disabilities Act. Not all iVotronic terminals are ADA-capable. Non-ADA terminals have a standard ballot presentation style that utilizes color to highlight locations on the screen that can be activated by touching them, such as “page right” and “page left”. ADA terminals can display color-enhanced ballots, but they also can display three non-color ballot formats: (1) high contrast with same font, (2) high contrast with a large font, and (3) an audio interface in which the contents of the ballot are spoken to the voter via an audio headset. ADA-capable terminals that are set to display color-enhanced ballots are usually not used for ADA voters because changing the terminal between the color-enhanced mode and the ADA mode requires a non-trivial administration action. Therefore, a voter who votes on an ADA-capable machine and does not invoke any of the ADA ballot formats will generally receive a black-and-white, high-contrast version of the ballot that they would have received on a non-ADA machine.

In Sarasota County, each polling place contained at least one ADA-capable machine as well as some number of non-ADA machines. ADA machines were not reserved solely for voters who needed the special accessibility features. Some non-ADA voters voted on ADA-capable terminals, and thus received the black-and-white, high-contrast regular-font ballot layout.

3.1.6 Poll Closing and Accumulation. At the end of the voting period, a poll worker reinserts the Master PEB into each terminal. We note that the iVotronic equipment does not itself impose any requirement to have a special Master PEB. Rather, the convention of using a Master PEB evolved because the iVotronic requires that the same PEB that opened a terminal be used to close that terminal. Designating a Master PEB has several procedural advantages over using multiple PEBs to open and close the polls; among other things, it reduces the potential for poll worker confusion about which PEB to use. Should the Master PEB be lost or unavailable when it is time to close the polls, there are procedures that allow an alternate PEB to close terminals.

It is also important to note that no cumulative vote count is kept during the voting period. Rather, iVotronic terminals accumulate Cast Vote Records (CVRs) in persistent, non-volatile memory. Each CVR records the set of candidates that a single voter voted for. CVRs are sometimes known colloquially as “ballot images”, though it is important to point out that they are not stored as a graphical image; instead, a CVR simply contains a list of codes identifying the candidates associated with that CVR. The closing process generates the paper summary tape used in the canvass process from the CVRs that are stored in the terminal non-volatile memory. The summary tapes are signed by poll officials and become the official returns from that polling place.

A separate step in closing the polls is the accumulation of audit data, namely event log entries and ballot images (CVRs). The poll worker is given an option to transfer the contents of the three terminal flash memories to the removable Compact Flash (CF) card. Each of the flashes is copied using a low-level binary copy to a special format file in the CF. This option was exercised in the CD13 elections in Sarasota as part of the closing procedures and we understand the resulting files are available by public records request.

3.1.7 Tabulation. As with Election Generation, tabulation occurs on the Unity server, not on the iVotronic terminal.

3.2 iVotronic Hardware Architecture

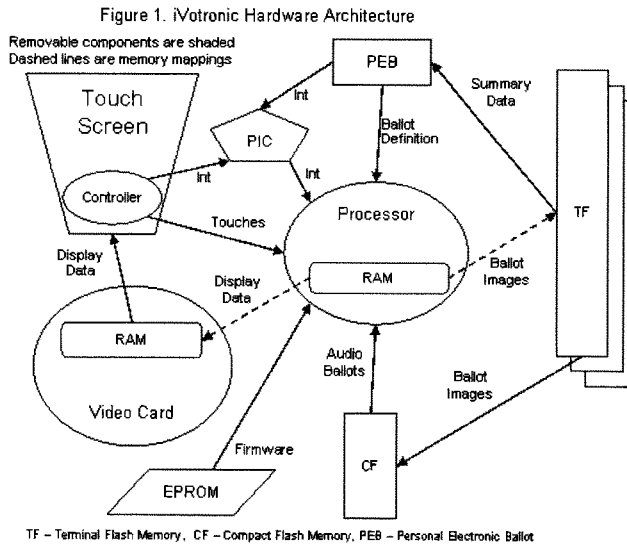
As we noted earlier, the iVotronic architecture and construction details are proprietary and we agreed to protect the vendor's intellectual property where it is not specifically pertinent to this analysis. Thus, we give an overview without addressing details where they are not important to our findings. Figure 1 provides a visual overview.

3.2.1 The iVotronic Terminal. The iVotronic terminal is the device that voters engage to review the contests and cast their ballot. As computers go, it is a simple device with the primary component and component packages that we discuss below.

3.2.2 Main Processor. The iVotronic processor is a widely used, general purpose processor. It is sufficiently mature that its properties are well understood and it has no distinguishing properties that impact this analysis. During each voter session, Random Access Memory (RAM) stores components of the contest and candidate records.

3.2.3 Touch Screen. The primary input/output interface is a touch screen, which is a graphic display panel with a pressure-sensitive surface. When pressure is placed on the touch screen, electrical resistance is reduced at the point of pressure. The screen is a commercial off-the-shelf component.

3.2.4 Touch Screen Controller. The touch screen controller is a programmable microcontroller that determines the X and Y coordinates of the point of maximum pressure on the touch screen. The touch screen controller also performs other functions, such as providing information about the battery voltage level of the system and turning on and off the backlight. It communicates with the main processor via the synchronous serial I/O port. It interrupts the main processor when it has data



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on this port for the main processor to receive. The touch screen controller is a commercial off-the-shelf component.

3.2.5 Programmable Interrupt Controllers (PICs). The system has two programmable interrupt controllers, called PICs for short. The PICs intermediate interrupt requests for the main processor from other devices. The devices that request interrupts in the iVotronic are: (1) two asynchronous serial I/O ports, (2) a synchronous serial I/O port, (3) a timer circuit that generates an interrupt every millisecond, and (4) hardware exceptions. The PIC hardware is a commercial off-the-shelf component.

3.2.6 Real-Time Clock. The real-time clock device keeps an integer count of seconds. It is read by the main processor and used to compute the date and time of day to a resolution of one second. It also provides information such as the serial number and model of the iVotronic device, an indication of whether there is a PEB in the PEB slot, and whether the PEB is of the supervisor or voter type (PEB type is discussed in a later section). The real-time clock device provides this information to the main processor via a sequence of 12 characters that is repeated once per second, one bit at a time. The real-time clock device cannot interrupt the main processor. Software on the main processor must poll the real-time clock bit frequently enough not to miss any bits.

3.2.7 Serial Communications Ports. There are two asynchronous serial I/O ports and one synchronous serial I/O port. One of the two asynchronous serial I/O ports is dedicated to serving the RS 232 interface to the external communications (printer and modem) pack. The other is dedicated to infrared communications with the PEB. The synchronous serial I/O port is dedicated to communications with the touch screen controller. Each of these interfaces interrupts the main processor when input data is available.

3.2.8 External Communications Pack (Printer/Modem). A modem can be connected to the iVotronic by attaching a communications pack through an RS-232 interface to one of the two asynchronous serial communications ports of the iVotronic. The modem can be used for transmission of election results to a central location. The communications pack also provides a printer that can be used for printing summary tapes.

3.2.9 PEB and PEB Interface. A Personal Electronic Ballot (PEB) is a non-volatile memory device designed for use with the iVotronic. PEBs hold the ballot definition, are used to open the terminal and to initialize every voting session. A PEB is about the size of a pack of cards.

The PEB communicates with the iVotronic terminal through a short-range infrared interface. The iVotronic terminal contains a special slot that a PEB can be inserted into. The iVotronic contains a magnetic switch that senses the presence of a PEB, and the iVotronic is programmed to only communicate over the infrared interface when a PEB has been inserted. The infrared connection is completely physically shielded while the PEB is inserted into an iVotronic terminal. We reviewed software that drives the PEB's infrared device and the corresponding terminal software that interfaces with the PEB.

A Supervisor PEB is a PEB that is initialized to be utilized exclusively by a poll worker. Sarasota County used a voting process known as "Pollworker-Activated Mode." In this operation mode, a poll worker who possesses a "Supervisor PEB" enables a machine for each voter. Specifically, the poll worker:

1. engages a validated voter at the check-in table;
2. escorts them to an available voting machine;

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3. inserts the PEB to enable the machine;
4. removes the PEB; and
5. leaves the voter to select and cast their votes.

The voting session cannot begin until the supervisor removes the PEB from the slot. The voter completes the session by pressing the vote button to cast their ballot. Should a voter leave an open session without casting their ballot, the poll worker can reinsert the PEB to cancel or cast their ballot and reinitialize the iVotronic for a subsequent voter.

The Supervisor PEB as issued to the poll worker is fully functional. Without any recharging or other re-initialization, poll workers can:

- (1) open the polls;
- (2) initiate new voting sessions;
- (3) cancel ongoing problematic voting sessions;
- (4) enter the service menu; and
- (5) close the polls

There is an alternate election administration procedure that uses another type of PEB, the “Voter PEB”. In that process, the clerk gives each voter a Voter PEB that enables their own terminal. This process is known as “Voter-Activated Mode.” Since Sarasota County did not use Voter-Activated Mode and did not employ Voter PEBs, we do not detail their operation further.

A Master PEB is a single Supervisor PEB that the polling place elections staff selects to open and close the election on all machines in the polling place. Before the election begins, all Supervisor PEBs within a precinct contain the same data. In particular, the Master PEB is identical to all other PEBs in that polling place, except for the serial number and other PEB-specific identification information. Local officials generally mark the Master PEB with a colored band for proper identification. Normal election procedures require that the same PEB (i.e. the designated Master PEB) open and close each machine. There are fall-back procedures to use an alternative PEB to close the election, for example if the Master PEB is damaged.

3.2.10 Vote Button. The vote button is a physical switch that the voter uses to cast their ballot once they complete candidate selection. The vote button only becomes active once the voter has paged through the entire ballot to the last review page. A flashing light inside the vote button indicates its active status. On a non-ADA machine, it is the only physical button (as opposed to “buttons” displayed on the touch screen) that voters engage.

3.2.11 Paging/Response Buttons to Support ADA Voters (ADA machines only). The Help America Vote Act (HAVA) requires at least one ADA terminal in any polling place at which disabled persons will vote. Approximately every fifth iVotronic terminal is ADA equipped. These terminals differ slightly from non-ADA machines, most prominently in that ADA terminals have three physical buttons for interacting with the machine. Like the VOTE button, ADA buttons are mounted on the iVotronic terminal frame, not displayed on the touch screen itself. When the poll worker selects ADA audio voting, the touch screen is inactive and the voter presses the ADA buttons in response to the audio ballot. When non-audio voters use the machine, the ADA buttons are disabled.

3.3 Memory Architecture. The iVotronic memory system is engineered in a five-tier hierarchy.

3.3.1 PEB. As described above, the PEB contains non-volatile memory. At poll opening, the PEB contains the ballot definition, which is copied into the terminal flash (see below) when a voting

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session begins. The PEB is designed to be easily and regularly inserted and removed from the voting terminal, as many as several hundred times per day, to initiate voter sessions and perform other functions. At the end of the election, one Master PEB in each polling place closes each terminal, receives and stores voting summary information, and may be inserted into a designated terminal to send results to the Supervisor's office via modem connection.

3.3.2 Non-volatile terminal flash provides persistent storage for ballot images. The iVotronic contains three internal flash chips that are used to store data in triplicate. If a voting terminal loses power, any ballot images recorded in this triply redundant store remain intact and available once power is restored, or through recovery procedures. The three flash chips are intended to contain identical information, and the iVotronic firmware regularly compares their contents to ensure 100% consistency. Two of these flash chips are fixed in the terminal and cannot be easily removed. The third can be easily removed by County elections technicians, for instance for auditing purposes, after opening the terminal case. Ballot images remain on these three flash chips and are available for audit until elections personnel conduct a clear and test operation (which erases terminal flash).

3.3.3 Compact Flash card. The Compact Flash (CF) card provides non-volatile storage. Like the PEB, the CF card is designed for easy removal. However, unlike the PEB, it is not intended to be removed from the terminal during the voting session. A sliding door on the terminal protects the CF card. In Sarasota County, tamper-resistant tape is used to seal this door to reduce the risk of removal without notice.

The CF card itself is similar to devices that consumers utilize in cameras and other portable devices that require high volume, non-volatile memory, e.g. SD cards. Before the election, elections staff insert the CF cards into the iVotronic terminals at County headquarters. The CF cards initially contain only audio files (for use with the audio interface provided by ADA machines) and information identifying this election uniquely. The contents of the CF card are not modified during the election. The poll closing procedure used in Sarasota County copies the ballot images and other audit information accumulated on the terminal flash to the CF card.

3.3.4 At the lowest level, the on-board Random Access Memory (RAM) provides volatile memory. RAM is not designed to be removed from the terminal and is not useful for routine audit purposes because its contents are volatile and vanish when the machine is powered down.

3.3.5 Erasable Programmable Read Only Memory (EPROM). The EPROM is a fixed chip that stores the iVotronic firmware (i.e., the executable code executed on the iVotronic's main processor). Firmware only needs to change when a software version update occurs. Elections staff typically load firmware to the EPROM through the service menu that copies the new firmware to the EPROM from a compact flash card that was prepared for this purpose.

3.4 iVotronic Software Architecture

To protect intellectual property, we again avoid providing details where these details are not relevant to our findings. iVotronic firmware is organized into two module groups, one that handles hardware interaction and services; the other is best described as voting application code. The software allows nine processing modes. Figure 2 roughly summarizes these modes.

3.4.1 Low-Level and Machine Interface Code. This group of code provides a hardware abstraction layer designed specifically for the iVotronic. The iVotronic does not have an operating system as that term is commonly understood. The modules in this group perform necessary services that

operating systems typically provide, including management services and interfacing to the input/output devices. Most of this code is written in C, a high level language that is commonly used for operating system code; there are a few small assembly language modules.

3.4.2 Application Code. These modules include the code that runs the election, including vote selection, vote recording, and the graphical user interface. These modules also include code to generate the summary reports and transfer them to the PEB, as well as the code to transfer the ballot images and audit data from terminal flash to the CF card. The application code is written entirely in C.

3.4.3 Relevant Code Properties

When we received the software, we did not expect to see high assurance source code. While the code meets the target 1990 voting system standard, there is a wide variation in naming and other readability characteristics. Global variables are integral components of virtually every function. While developers did not use “gotos”, control flow is not standardized and is often unintuitive. The code base is aging and shows the effects of numerous modifications. The team was frustrated by the code’s limited readability, and we suspected corresponding reliability issues.

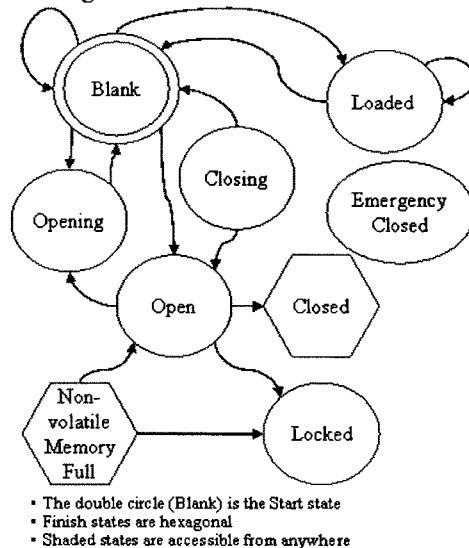
Other aspects of the code structure present hurdles for readability and maintenance, so errors could easily be introduced during updates to the code made as part of the normal software life cycle. There is an excessive reliance on global variables compounded by a lack of a high-level design to model the software components and functions. This led to a repetitive coding style, in which functions sometimes repeat checks and initializations that were performed at earlier points. We identified several benign, harmless defects caused by this strategy.

A positive aspect of the iVotronic firmware is that it contains only a small amount of commercial off-the-shelf (COTS) code not written by the vendor, including a driver for the CF card and a standard C library provided by the compiler. We did not review the source code for any of this COTS code, but because COTS code was used so sparingly, this was not an impediment to the iVotronic firmware analysis.

Conversely, the iVotronic firmware source has several important properties that support reliability and maintenance. Of central importance, the vendor controls all critical code, as there is no commercial operating system. Thus, the iVotronic code need not provide general-purpose functionality; rather it focuses on special purpose electronic voting services that are narrowly tailored to this specific application.

Moreover, while the code is not highly readable, it avoids complex (and correspondingly dangerous) operations such as dynamic memory allocation and multi-threading. Though the

Figure 2. iVotronic Software Modes



iVotronic code is not well modularized, it also does not suffer from well-known complexities associated with modern object-oriented programming, such as the fragile base class problem.

The basic structure of the application is simple. The voting code executes in a single-threaded, single-address space application, thereby avoiding many of the challenges associated with multi-threaded concurrent software. There is a single thread of control, corresponding to the main program. The processor is reset and the main program is reloaded and restarted with freshly initialized variables for each voter. There are hardware interrupt handlers that interact with I/O devices primarily to update global variables. Those global variables are read, and sometimes also updated, by the main program, thus there is a potential for timing-dependent errors.

4 Assumptions

During the course of any scientific analysis, investigators make many assumptions. Here, we list the most important subset of assumptions that we made. We used most of these assumptions to reduce the amount of code we had to review manually by limiting our examination of code to that which could have executed in the CD13 race. As our work progressed, we were able to independently corroborate these assumptions as noted below.

4.1 Election Configuration

While the iVotronic is used only for elections, voting system requirements can vary greatly from state to state, or even county to county. For example, some states leverage touch screen device capabilities to reduce natural candidate order bias by rotating the candidate order from voter to voter. Thus, even though the iVotronic code is special-purpose software targeted to a specific task (i.e. voting), there is always a significant amount of the code base that is not exercised in any given election. In many cases, configuration options determine which code paths can or cannot be executed. We examined the election configuration used in Sarasota County and used it to focus our efforts on relevant code and to allow us to understand the correct execution paths. In particular, we only examined code that could have been executed in Sarasota County in November, 2006, given the configuration options that were enabled in Sarasota County. Consequently, many of our assumptions refer to which configuration options were enabled.

We confirmed these assumptions in a variety of ways. For example: (1) we looked at screenshots of the Sarasota ballot; (2) we examined textual versions of the ballot definition files from the Sarasota election; (3) we loaded the Sarasota election definition onto an iVotronic and executed and observed a mock election using the same election definition files used in the November 2006 election; and (4) we obtained information about the November, 2006 election from the FLDoS and the Sarasota Supervisor of Elections staff.

4.1.1 No Candidate Rotation. As noted above, iVotronic firmware supports candidate rotation so that the candidate's ballot order is rotated from voter to voter. In Florida, the candidate order is static, so the Sarasota ballot that includes the CD13 race did not rotate candidates.

4.1.2 No Multi-page Races. Occasionally there are so many candidates in a race that it is not possible to effectively display them all on the same ballot page. The iVotronic firmware includes logic and features to handle multi-page contests. There were no normal-font, multi-page races on the Sarasota ballot. However, some races displayed in large-font mode required more than one page to display. The CD13 race displayed on a single page by itself in large font mode.

4.1.3 Multi-Column Display. The iVotronic firmware allows single and multi-column ballot pages. There were nine ballot styles used in Sarasota across 156 precincts. Of course, ballots differ

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by precinct. The Sarasota ballot styles utilize between fifteen and twenty-one single column pages for initial candidate selection and three or four double column display pages for the ballot summary. Three or four review pages are two-column display. All re-vote pages are displayed in a single column.

4.1.4 Re-vote Pages. During the review process, when a voter selects a race to re-vote, the iVotronic software generates a display page containing only the selected race. This is a logical and appropriate process: the voter is presented with only the race that was selected for re-vote. However, we note that this behavior may create the illusion of a missing race on the original ballot: because the re-vote screen is so different from the main voting screen it may confuse voters into believing the revoted race did not appear on the original ballot. We address this as an undervote hypothesis in Section 6 below.

4.1.5 Text Ballots. The iVotronic manages ballots in either text or bit-mapped format. There is a significant amount of iVotronic code that deals with bit-mapped ballots. The Sarasota ballot was text-based, and there were no bit-mapped ballots used in Sarasota County.

4.1.6 No Multi-Language Ballots. iVotronic text-based ballots allow English or Spanish versions. Only English language ballots were activated in Sarasota.

4.1.7 No Straight Party Voting. Some states provide a simplified voting process for straight party voters. While the iVotronic firmware supports this voting feature, straight-party voting was not enabled in the Sarasota County ballot definition.

4.1.8 No Controlling Contests. When a voter's selection in one contest determines her eligibility to vote in a different contest, the former is called a "controlling contest". There were no controlling contests on the Sarasota ballot.

4.1.9 The Firmware Compilation Environment. We assume that the tools used to build the firmware from the source code:

1. Worked correctly;
2. Comply with the ANSI C programming language standard;
3. Do not have any bugs or unexpected behavior.

We assume that the firmware image provided to us was compiled correctly from the source code provided to us. We also assume that the firmware image provided to us was the firmware image that was actually executed by the iVotronic machines on Election Day. These assumptions imply that the executable software executed by the iVotronic systems during the election matched the source code we examined. As our study focused *only* on the source code, we did not attempt to reconstruct the executable firmware image. Both ES&S and FLDoS told us that the firmware compilation environment worked correctly.

4.2 Ballot Images Contain the Undervote. The undervote totals shown in the summary reports are identical to the ballot images that reside on non-volatile terminal flash memory. FLDoS confirmed that in their tests they extracted ballot images through the election management system, compared the count to the summary tape, and confirmed that the totals were identical. This indicates that if the undervote is due to a flaw or malicious act, that flaw or malicious act changed both the ballot image and the summary report. It also ensures that the undervote did not occur due to a tabulation error at poll closing or afterward by any means, either accidental or deliberate.

4.3 Hardware Configuration Assumptions. We assume that the external communications pack was not attached during the election. Also, we assume that the touch screen controller and PICs, did not fail in a malicious way; that is, they either functioned correctly or failed in a way that was detected and resulted in the machine being taken out of service.

5 Activities That Are Out of Scope for This Analysis (i.e. Things We Did Not Do)

5.1 We did not conduct a comprehensive election audit. The Statement of Work gave the task of this team as:

The sole purpose of this project is to conduct a scientifically rigorous static software analysis on the iVotronics version 8.0.1.2 firmware source code to determine and identify flaws, vulnerabilities or anomalies, if any, that may have potentially caused, contributed or otherwise created the higher than expected under-vote rate in the District 13 Race.

The team's task was *not* to examine the iVotronic systems or the PEBs used in the election, or to perform forensic analysis on those systems to determine whether a problem in them caused the undervote. The team's task was to determine whether the source code used to create the firmware on those systems had flaws that would explain, or could have contributed to, the undervote. An analogy to the limited task of this group lies in the realm of automotive mechanics. If one car's computer has a problem, that car is examined. If many cars' computer systems have the same problem, a larger study is required to determine whether the programming is at fault. The individual cars are also examined to determine whether the individual computers were defective, or the programming on those individual computers was altered. In this analogy, the team is examining the programming. This is a part of the broader study into the computers failing, the FLDoS conducting the complete study of the cars' computer systems. Our investigation was just one part of a larger audit performed by the FLDoS.

Nevertheless, many hypotheses concerning the undervote can be ruled out through a combination of source code review and other evidence, such as the distribution of the undervote across the entire county, a similar undervote in Charlotte County (see Section 8.1 below), and the absence of undervote in other iVotronic jurisdictions.

5.2 We did not attempt to verify that the code is completely free of defects. There are fundamental limits on the ability of manual source code review to find defects in computer software. Manual code review is an imprecise process, guided by best practices and analyst intuition. It is impossible to check all code paths that might be executed in any nontrivial computer program. Also, in any nontrivial computer program, it is impossible to exhaustively enumerate and analyze the full state space that the code inhabits. Moreover, humans are fallible: just as the original software programmer can miss a defect in the code they write, so too can independent reviewers overlook subtle defects and bugs in the code.

We did not attempt to use formal methods. We did not attempt to apply software verification techniques such as Hoare logic, Dijkstra's weakest preconditions, or model checking to mathematically prove the absence of defects in the code. Rather, we used informal code inspection, guided by our engineering knowledge and experience.

Classically, software analysis usually involves a combination of static analysis (e.g., manual code review) and dynamic analysis (e.g., black-box testing, unit tests). This project was charged to perform static analysis of the code; dynamic analysis was not part of our charge. That said, the team were provided some access to equipment for testing and hands on evaluation, and we did

supplement our static code analysis with directed testing and experimentation with the iVotronic equipment. However, even the combination of static code analysis, black-box testing, and clear-box testing cannot reveal the presence or absence of all faults in non-trivial programs.

For these reasons, we make no claims that we found all bugs or defects in the code.

However, we did perform a systematic and structured analysis of the aspects of the code that we believed to be relevant to the CD13 undervote. The purpose of this study was not to find all potential defects, but rather to accomplish the limited objective of finding the specific class of defects that may have contributed to the CD13 undervote. The limited scope of our investigation helped us to focus our analysis and increases our confidence in the completeness of our findings. While another set of reviewers with access to the code might find bugs we missed, we do not believe they would find bugs or defects that caused or contributed to the CD13 undervote. Nonetheless, we accept that certainty is unlikely even with limited scope and correspondingly offer only our best professional opinions rather than absolute guarantees.

We also emphasize that, even though manual code analysis has limitations, it is nonetheless an effective and powerful way to analyze a system such as this. Code inspection is a state-of-the-art technique for evaluating the reliability, security, and accuracy of systems such as this, and it has important advantages over its competitors. For instance, code review can find many defects and problems that black-box testing (e.g., logic and accuracy tests, mock elections, and parallel testing) cannot. Code review is especially powerful when combined with other software testing and evaluation methods, such as those undertaken during the FLDoS audit. If there were a software flaw or bug that caused or contributed to the CD13 undervote, we believe that one of these methods would have been able to find it.

5.3 We did not conduct a Red-Team exercise. One popular computer system vulnerability assessment approach is to engage skilled security specialists to attack working systems in order to determine their security strength. Depending on the terms of the Red Team project, they may have extensive access to code for static and dynamic analysis, or they may simply observe the system to determine their attack simulation approach. When done right, Red Teams rely on skill sets acquired through years of red teaming and an understanding of how the systems are used in the field. Red Team assessments are often conducted under conditions that mirror how the system will be used in practice. In this case, a thorough Red Team assessment would have had to be performed under conditions that mirror an actual election, with consideration of all administrative and security mechanisms that are employed in practice. We did not conduct a Red Team assessment.

5.4 We did not examine election management system source code. As we note earlier, the Statement of Work confined our work to analysis of the source code for the iVotronic firmware. We did not exercise or examine the election management system software. We note, however, that no activities of the election management software after the election could have had any effect on the undervote, because the summary tapes produced at polling places at the close of voting also showed an identically high undervote rate, and there is no way that any failure or fault in the election management software after the election could have altered the summary tapes.

5.5 We did not duplicate FLDoS audits. The FLDoS audit plan and results to date are posted on the FLDoS web page. These tests include machine and equipment examination, parallel testing, and other analysis. Although some of the team's activities overlapped with these tests, we did not duplicate these efforts. For example, the FLDoS conducted two dynamic tests, termed parallel tests

[10]. These tests involved precisely reproducing election day behavior by having staff members acting as voters entering selections directed by scripts generated based on voting terminal audit records. They conducted two parallel tests, one with standby terminals that were not used in the CD13 election and the second test did utilize terminals used in the election. These tests did not reveal any anomalies. Thus, we did not conduct parallel tests and we did not disassemble any iVotronic or PEB hardware. Rather, we examined anomalous behavior only to identify possible hypotheses that might explain the CD13 undervote.

5.6 Software that we did not review. There are two categories of software components within the iVotronic terminal whose review is outside this project's scope and thus, was not available to the team. One category is firmware of I/O devices. There is a programmable microcontroller that manages communication between the main processor and the touch-screen. Comments in the main processor code identify the part number of the microcontroller. The interactions with the controller are well defined and are under the control of the main-processor firmware, which we reviewed.

The second category is third-party utility libraries. There is an I/O library provided by the manufacturer of the terminal, compact, and PEB flash memory modules and there are the C-language runtime libraries provided by the compiler vendor. These are reported to be generic libraries, proprietary to the respective third-party vendors, and are not considered part of the iVotronic firmware.

6 Findings

The first group of detailed findings that we present deals with reliability issues. In particular, our focus in this section is to identify potential non-malicious software faults that may have contributed to the CD13 undervote. We order these reliability findings based on the primary point at which they occur in the iVotronic election process. The later subsections detail asynchronous concerns and audit related issues.

Much of our work was focused on attempting to confirm or refute specific hypotheses that, if true, might explain the CD13 undervote. Consequently, many findings reflect our hypothesis-based approach, and we relate most of our findings to potential causes or contributors to the CD13 undervote. Once again, we do not claim to have exhaustively considered all possible undervote hypotheses. Rather, we examined those scenarios available to us and we spent considerable time and energy brainstorming and seeking alternative hypotheses. Our team spent many person-hours reviewing information about the undervote symptoms as well as reviewing the firmware source code. While potential hypotheses may remain unconsidered, we believe that we investigated those that are most likely and most dangerous.

We generally present our findings as follows. We describe the general hypothesis, and then refine it to a particular falsifiable hypothesis. We identify technology features that might make the hypothesis a reasonable one, and then give a technical analysis of the relevant parts of the system in light of the hypothesis. Then we discuss constraints that might inhibit the hypothesis holding and specific factors present in Sarasota that might have enabled the hypothetical flaw. We close with a remedy for the flaw postulated in the hypothesis.

We emphasize that we did not conduct independent investigations to verify information given to us by the FLDoS or Sarasota officials. Many of the enabling factors and constraints come from their information.

6.1 Findings About the Elections Setup

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6.1.1 Problem in Name Information on One or More PEBs.

Overview. The iVotronic firmware utilizes a special character (@) as the first character in the candidate name field to indicate that the candidate is “non-votable”. Were this symbol to inadvertently appear in a ballot definition, voters would be prevented from casting a vote for that candidate.

Hypothesis. Based on voter complaints indicating that they were not given an option to vote for a candidate, we considered the possibility that the non-votable character may have been erroneously prefixed on a candidate’s name on some number of PEBs. Were the PEBs initialized with this flaw or if such a flaw was introduced during the voting process, the candidate would appear on the ballot, but since there was no controlling contest to enable the candidate, no voter with a voting session initialized with such a PEB would be able to vote for the candidate that was so marked.

Enabling Technology. PEBs are special purpose memory devices that hold ballot definition files to initialize voter sessions and store summary tapes when the election is closed. While malicious injection is possible, a more likely cause would be a faulty initialization process that mistakenly pre-pended the @ character to a candidate’s name. In this case, approximately fifteen percent of PEBs would have had to contain this faulty ballot definition in order to cause the entire undervote.

Technical Analysis. We did not find any mechanisms in the firmware that can prevent this error (or attack). If the ballot definition marks a candidate as non-votable, the firmware recognizes them as non-votable and does not display a vote box, and the touch screen is not configured to detect a vote for that candidate. This status is pervasive through the entire voting process, including the summary and review process. Conversely, there is no code that modifies the candidate name field, so if this field contains this character initially, it will persist for the duration of the election on that machine.

Constraints. There are several contraindications regarding this hypothesis. The primary detractor is that if a candidate is labeled non-votable, voters would not have been able to correct the undervote through the review process. The vast majority of voter complaints confirmed that they were able to correct the undervote. Additionally, were this problem widespread, it is such a clear flaw that it would have generated many very specific reports that poll workers could easily have verified and would have noted in the precinct reports. We found very few voters that noted this problem. Finally, we requested a copy of the election definition files from the Sarasota County Supervisor of Elections. We were given a textual dump, output by Unity, of all of the ballot styles used in every precinct in Sarasota County. No candidate name was prefixed with an @ character in those files.

Enabling Factors Present in Sarasota. There are no enabling factors present. We were led to examine this hypothesis by the undervote symptoms.

Potential Remedy. Utilizing a special character in a name field is non-intuitive and error-prone. The contest record should include properly named and typed fields that reflect the contest’s status on the ballot. It should be controlled by well-defined, clearly identified mechanisms.

6.2 Findings About Voting Sessions

6.2.1 Voting Phase Findings

6.2.1.1 Investigate Reports that the Display Was Slow to Respond to Touch.

Overview. We consider a scenario in which technical impacts from slow touch screen response may unintentionally prevent the voter’s selection from registering during the vote selection process, but not during the review cycle.

Hypothesis. If a voter is able to interact with the touch screen in a sequence that causes the screen to display a candidate selection that does not match their most recent touch, it may cause the voter to misinterpret their selection for that race. Specifically, consider a situation where a voter touches a vote box twice in rapid succession. If the software delays updating the display in response to the second touch for some reason, after a very short period the voter may accept the first display response as conclusive, and due to the delay (if it exists) the voter might not notice the delayed update in response to the second touch. It is also possible that the second touch would cause the candidate to be deselected after having been selected.

Similarly, we consider a situation where a voter touches a vote box and waits patiently for her vote to display for a few moments before assuming her touch was not detected and touching the screen again. If the first touch is recorded and if the display is updated only after the second touch, the voter may accept the first display response as conclusive, while a delay (if it exists) could cause later display of the second recorded touch that the voter may not notice.

These scenarios are consistent with reports by some voters that they voted for a candidate, but noticed their vote was not registered when they reviewed their selections on the summary screen.

Enabling Technology. Low level hardware and software systems often utilize semaphores, polling routines, and other “wait and sec” control procedures. We consider possible code flaws that may trigger these timing mechanisms in a way that exceeds normal limits, and cause corresponding synchronization problems.

Technical Analysis. Source code inspection reveals a predominantly sequential control process between touch detection, vote recording, and vote display. The only exceptions are a few interrupts that update global variables and return immediately. Our analysis indicates that the software cannot read a new touch until after the previous recorded selection displays. In particular, after detecting a touch to the screen, the software immediately updates the screen, then clears the buffer of touch events and waits for a quiescent state (i.e., where the voter is not touching the screen) before accepting the next touch event. At the hardware interface, the software cycle involves writing the image into a display buffer, and the delay in displaying this image to the voter can be measured in milliseconds. The touch screen controller displays this buffer approximately thirty times per second. Since the software extracts the information to generate the display value from the candidate’s vote field, sequencing appears properly implemented. While it is conceivable that the touch detection mechanism may cause significant delay, such a delay could not result in a press, record, display synchronization problem in the scenario we describe.

Enabling Factors Present in Sarasota. The team reviewed numerous precinct log entries and noticed that several voters complained about slow touch screen response.

Constraints. (1) Machines where screen delay complaints originated did not uniformly reflect the high undervote. The first machine that we checked had only a 7% undervote rate, considerably less than the 18% undervote rate. (2) There is no logic that explains why such a fault, if it existed, would have affected only one race on the 15-21 page ballot.

Potential Remedy. Aging and dirty hardware components are out of this team’s scope. However, from a systems perspective, when elections depend on machinery, Supervisors of Election must have an aggressive maintenance and replacement schedule in place for that machinery.

6.2.1.2 Consider Whether Event 18 (“Invalid Vote PEB”) Caused or Contributed to the CD13 Undervote

Overview. Sarasota event logs reflected a significant number of Event 18 instances. These events are identified in the event log by the message “Invalid Vote PEB”. We traced each Event 18

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instance to its cause and verified that they had no impact on any voting function, thus no impact on the CD13 undervote.

Hypothesis. We considered the Event 18 occurrences anomalous and investigated whether they may indicate machine failure or relate to any unusual behavior, particularly behavior that may have contributed to the CD13 undervote.

Technical Analysis. As part of the audit record routinely provided by the iVotronic, the firmware logs events that describe activity that may be of interest after the election. Though this particular event is unusual, we tracked each event occurrence to its cause. Each was triggered by the machine losing (or never having) communication with the PEB during an operation that needs the PEB to be inserted. Such instances mis-assign the value 0 to the variable that tracks whether the PEB is a Voter PEB or a Supervisor PEB. The software that prints the event logs interprets a 0 (or any value other than the value for a Supervisor PEB) as meaning a Voter PEB.

We identified a number of entries in the event logs associated with PEB type 0, including “Invalid Vote PEB” (Event 18) as well as “Normal Ballot Cast” events. There are four different categories of unexpected event log entries associated with PEB type 0 in the Sarasota event log. The first category is caused by a benign software defect. The final three categories reflect valid responses to poll worker PEB handling anomalies.

1. A “Normal Ballot Cast” event associated with PEB type 0 on an ADA terminal with Spanish disabled, and the PEB serial number in the event log is 0.
2. An “Invalid Vote PEB” event is the first event of a day, and the PEB serial number in the event log is 0, and there was voting the previous day. This occurs only in early voting situations.
3. An “Invalid Vote PEB” event intermittently occurs, and is immediately followed by a subsequent vote cast, and the PEB serial number associated with the “Invalid Vote PEB” event is 0.
4. An “Invalid Vote PEB” event intermittently occurs without an immediately subsequent vote, and the PEB serial number associated with the “Invalid Vote PEB” event is 0.

The first of these symptoms results deterministically from a defect in the code that only triggers on ADA terminals when the Spanish ballot is not enabled. The defect is associated with a function call that attempts to query the PEB when no PEB is present. When no PEB is present, the iVotronic software routine that queries the PEB assigns a 0 to the global variable holding the PEB type, to indicate a failure when attempting to query the PEB. In this case, it also sets the global variable holding the PEB serial number to 0. After the poll worker removes the PEB, the iVotronic terminal proceeds to display an initial screen to the voter. In the process of composing that screen, a function is called to display the PEB voltage, and that function queries the PEB. Since this function is invoked after the PEB has been removed (i.e., when no PEB is inserted), it will have the side effect of setting the PEB type to 0 and the PEB serial number to 0. Later, when the voter finishes voting and casts their ballot, the iVotronic terminal writes an event log entry indicating a “Normal Ballot Cast” event, and it reads the current value of the PEB type and PEB serial number global variables without checking them for validity and stores them in the event log entry. Since those global variables hold the value 0, this results in a “Normal Ballot Cast” event with PEB kind 0 and PEB serial number 0. Later, when Unity software is used to convert the event log into a textual format, the PEB kind 0 will be interpreted as a Voter PEB, because Unity interprets any unknown PEB kind value as a Voter PEB. Other than this erroneous value (and the PEB’s serial number also being set to 0), there is no negative impact and the only symptom is the message in the event log. The error condition occurs during language selection on ADA terminals where the Spanish language ballot is

not enabled. Thus, all ballots cast on ADA terminals in Sarasota reflect this event, and there are no other instances of this event in the event logs.

The team identified this symptom in early January and tracked its cause and impact within one day. We give an extensive, detailed analysis by routine and line number of this category of anomalous event log entries in Appendix F. This appendix is marked as proprietary and confidential, because it gives intimate detail regarding code flow and operation and it identifies the modules, functions, variables, and line numbers associated with this defect in the code. It is illustrative of the rigorous, detailed analysis that the team conducted throughout the review. However, due to its detail, it exposes significant proprietary information and is marked as proprietary and confidential.

Based on this analysis, we were able to determine that the first category of anomalous event log entries were benign. While they were indeed due to a defect in the code, we were able to exhaustively analyze that defect and determine that it did not cause any effect on voting other than causing incorrect log entries.

As it turns out, the other three categories of “Invalid Vote PEB” log entries had a different explanation. This complicated and extended our investigation, because the other three categories clouded the symptom patterns.

The second category of log entries occurs on machines utilized in early voting. The event uniformly occurred at the beginning of each day on every terminal where there was voting the previous day, thus is only applicable to early voting devices. Several investigators independently reconfirmed that all code sequences associated with the “Invalid Vote PEB” message (Event 18) had no possible impact on the election results. A query to the Sarasota elections staff confirmed our hypothesis that elections staff woke up terminals by dropping a PEB in the slot and quickly removing it. They did this as part of their opening process to confirm that the vote count on machines locked in secure storage was not tampered with overnight. This process caused the iVotronic machine to register a problem when attempting to query the PEB (because it had been removed before the iVotronic was able to fully read it), thus triggering an “Invalid Vote PEB” message. In other words, the software was operating as designed. Thus, this category, too, is benign.

There are a few event log instances where a new early voting day is not accompanied by Event 18. This pattern is consistent with the poll worker having left the awakening PEB in the machine until the open splash screen appeared. At that point, PEB removal does not trigger an “Invalid Vote PEB” message.

The final two categories of log entries presentations also reflect the proper software response to lost communication with the PEB. If the PEB was jiggled or spuriously removed, normally during voting session initialization, an “Invalid Vote PEB” message is generated. Typically when this happens, a poll worker need only remove and reinsert the PEB to begin a new normal voting session. The event logs consistently reflect that normal voting session completion events follow these Event 18 instances within a few minutes.

In the fourth category of log entries, the event intermittently occurs without an immediately subsequent vote. There are only a few of these log entries and they are all followed by another normal session within an hour or two. This symptom is consistent with the poll worker simply taking the voter to another terminal when they experience an “Invalid Vote PEB” (Event 18) message.

We note that one study identified a correlation between machines that contained a PEB with serial number 0 and a higher-than-average undervote rate in the CD13 race. That study hypothesized that the anomalous event log entries might reflect a software defect that could have contributed to the CD13 undervote. Our analysis refutes that hypothesis and fully explains the cause of the anomalous

log entries. It remains to be seen why there was a correlation between these log entries and the undervote rate. However, we note that every ADA terminal contained these anomalous log entries, and the overwhelming majority of anomalous log entries were associated with ADA terminals. Consequently, the study's results could be alternately described as revealing that ADA terminals were subject to a slightly higher-than-average CD13 undervote rate than non-ADA terminals. It is not clear why this might be so, though one possible explanation might lie with the slight differences in ballot presentation between ADA and non-ADA machines (e.g., non-ADA machines display parts of the ballot in color, while ADA machines display the ballot entirely in black and white when used by non-ADA voters). In summary, the evidence available to us is consistent with our conclusion that machine faults or errors did not cause or contribute to the CD13 undervote.

Potential Remedy. The vendor notified the team about the software defect in late January. They had independently identified this problem and they indicated to us that the flaw is corrected in subsequent iVotronic firmware versions. Again, the log entry does not affect the accuracy of the recording of votes, but the message does not accurately reflect the terminal's behavior. To resolve the early voting wake-up event, we note that the lock and unlock operations are designed for this function and may be a better option for poll workers.

6.2.1.3 Controlling Contests and Their Potential Effect on CD13

Overview. The iVotronic supports controlling contests, a special kind of contest where the selections made in one contest can affect eligibility to vote in another contest. If contest A controls contest B, the voter is only allowed to vote in contest B if she made a specific selection in contest A. As an example, a controlling contest situation may occur in a recall election. The mechanism is used to designate a particular contest—e.g., the choice to recall or not an incumbent—as controller. A subsequent contest—e.g., candidates for the office under recall vote—can be designated as controlled by the earlier contest. If the voter does not select the choice to recall the incumbent, then the voter is not allowed to make any selection in the controlled contest, and an undervote is recorded in the controlled contest.

Though there were no controlling contest relationships in Sarasota, if such a configuration were accidentally present, it could cause an undervote.

Hypothesis. We considered the possibility that the US Senate race was designed as a controlling contest and CD13 as the controlled contest. The iVotronic requires that the controlling contest appear earlier on the ballot than the controlled contest, so the US Senate race is the only possibility for the controller.

Enabling technology. Designating the Senate contest as controller for the CD13 contest could have prevented voters that made a particular selection in the Senate race from casting a vote in the CD13 race.

Technical Analysis. We verified through examination of the code that the iVotronic software enforces that the controller race must precede the controlled race. This restricts the possibility of a controller contest to the Senate race. As part of our investigation we verified that the ballot definition files for Sarasota County did not contain any controlling contests and the configuration of the Senate race was identical in all precincts.

In addition, if a particular voting machine were erroneously initialized with one or more ballot styles defining the Senate race as controller for the CD13 contest, this configuration would be highly visible to the voter: If the voter were to make a selection in a particular contest that is disallowed because of a prior selection in a controller contest, a message is displayed in the screen instructing the voter that unless the controller contest is re-visited and its selection changed, the voter cannot cast a choice in the current contest. We found no voter reports of having encountered

such behavior, which is unlikely since the undervote was extensive and widely distributed. Moreover, the parallel tests performed by the FLDoS did not reveal such behavior.

Finally, if this hypothesis were accurate, it would create a distinctive pattern in the ballot images, where some particular selection(s) in the US Senate race was always associated with an undervote in CD13 on the affected machine(s). To explain the CD13 undervote, most machines would have had to be affected in this way. No such pattern was observed in our examination of the ballot images. Our conclusion is that such configuration error could not have contributed to the observed effects in the CD13 contest.

Enabling factors present in Sarasota. The only factor of note that was present in Sarasota is that the CD13 contest was not the first contest in the ballot, which satisfies one requirement for a controlled contest. While in principle such configuration errors in selected ballot styles could lead to the observed undervote percentages, our review of the official ballot definitions, and more significantly, the lack of recorded voter complaints describing symptoms that match this error effectively rule it out as a factor in the CD13 undervote.

Mitigating Factors. Such a configuration error in the ballot definition can be easily ascertained with proper testing before the election. Again, it is imperative that testing be performed for each ballot definition.

6.2.1.4 Consider the Possibility of Definition of Straight Party Rules

Overview. The iVotronic supports a generic voting feature that can subject contests to straight party voting rules. If a particular contest sets a party preference, the iVotronic may prevent the voter from making selections for candidates of the selected party in all contests subject to straight party, by displaying the candidates of the selected party without a voting box. Instead, when the voter casts the ballot, the candidates of the selected party are recorded as “straight voted.” There were no straight party rules in the official Sarasota ballot definitions. In addition, straight vote is neither a blank vote nor an undervote.

Hypothesis. Designating a selection in a straight party contest could subsequently prevent that voter from selecting a candidate of the same party in any contest subject to the straight party rule. If later the voter were to re-visit and de-select the straight party contest, this might result in undervotes in the contests subject to the straight party rules.

Technical Analysis. The presence of straight party rules is visible to the voter in various ways: (1) When interacting with a contest controlled by the straight party rules, the voting boxes of candidates of the same party would not be displayed if the voter is not allowed to make that selection; (2) if the voter were later to de-select the straight party contest, the summary pages would show the undervote in the contests without a selection. Note that the selection of a party subsequent to the choice of a candidate of the same party in another race may not clear the earlier choice for that candidate. In other words, the selection of a party in a straight party contest may not “clear” any voter choices in specific elections, and sets or removes the “default” choice in contests where the voter has not made any selection. Indeed, the erroneous configuration of straight party rules would more likely decrease, rather than increase, undervote rates. In addition, the fact that high undervote rates were observed among voters that displayed a tendency to “straight voting” is a counter-indication to this having been a factor in the undervote—if any of the other races had been configured to trigger straight party preference, that would result in the same party candidate being selected in the congressional race.

Enabling factors present in Sarasota. No enabling factors are present in Sarasota, except for the intrinsic capability of the iVotronic to be so configured.

Mitigating Factors. Such a configuration error in the ballot definition can be easily ascertained with proper testing before the election.

6.2.1.5 Investigate Reports That the CD13 Race Was Not Displayed

Overview. In reviewing polling place logs, we noticed several voter reports that the CD13 race did not appear on the ballot. However, when they noticed the “NO SELECTION MADE” message on the review screen, they returned to re-vote the race successfully. We consider reasons why the race might not have appeared on its proper ballot page.

Hypothesis. We analyzed the firmware to identify potential flaws that cause a race configured similarly to the CD13 race (two candidates, both major party candidates, top of the page, no write-in, appearing on the same page with a many-candidate race) to not be presented to every voter.

Technical Analysis. The team spent many hours with hands on testing and reviewing iVotronic operation, including analyzing the Sarasota election setup. There are three specific properties that are relevant to this question. The first two reflect relationships between the first two ballot pages and the third addresses the differences between the original CD13 vote page and its review page.

(1) While some localities may hold elections on average once per year, few voters vote more than once every two years. Many others vote every four years or less often. Thus, when voters begin the (unfamiliar) voting process, they may quickly grasp any detected patterns as they seek familiarity. On the Sarasota ballot, the first ballot page set a pattern of having two large (3 or 4 lines) headers, separated by a straight line, and followed by a large multi-candidate race. The second page format closely follows this pattern, with the exception that there is a two candidate race between the two headings. The similarity is clear when looking at the first two ballot pages side-by-side as seen in the first two screen shots in Appendix A. This effect is more pronounced when the second page is superimposed on the first.

(2) The vote touch spot for the Democrat and Republican candidates in the large races are similarly placed on the first two ballot pages. Again, the similarity is striking when the pages are superimposed. The vote box for Bill Nelson on the first page is set just above the vote box for Jim Davis on the second page; similarly for Harris and Crist. The problem is that if the voter is drawn to Crist or Davis on the second page because the ballots look the same and because that is where they voted on the first page, they may naturally have missed the CD13 contest. This page similarity is equally as noticeable on the iVotronic itself, where it was first identified.

(3) The third factor reflects the difference between the original CD13 screen and the re-vote screen that is presented when the user visits the review screen and then selects the CD13 race to change their vote in CD13. The original page containing the CD13 contest is full from top to bottom with seven header lines and candidates for two races. Conversely, the CD13 re-vote page displays only the CD13 race and shows only two candidates. The re-vote page for the CD13 race (third picture in Appendix A) is nearly blank, which is unlike any page on the original ballot. It is not surprising that people would insist that the CD13 page *that they saw when correcting an initial undervote in CD13* was not on the original ballot, because it actually was not. It is also easy to understand how voters who used the review screen to correct an initial undervote in CD13 would be convinced that they would not have missed the race had it been originally displayed.

Constraints. Some have suggested [7] that because another ballot page that contained the Hospital Board contest is similar to the CD13 page and the undervote pattern did not appear there, the ballot format could not have caused the CD13 undervote. We assume the researchers are referring to ballots styles other than the ballot style that was utilized in twenty Sarasota precincts that had the Hospital Board contest at the bottom of the ballot page. However, ballot pages #2 and #6 are different in several important ways with respect to the other ballot styles as well.

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- (1) Page #2 has two (2) three-line headers while page #6 has three (3) one-line headers.
- (2) Page #2 has two contests, while page #6 has three equal-sized contests.
- (3) Page #2 has one contest with six candidates; page #6 contains only two-candidate contests.
- (4) There are nine possible selections on page #2, while there are only six selections on page 6.
- (5) The Hospital Board contest appears significantly later in the ballot, after voters have had a chance to acclimate themselves to the ballot format. In contrast, the CD13 contest appears on page #2 immediately after a page containing a single contest, which may have primed voters to expect a single contest per page. That expectation may have become weakened by the time voters reached the Hospital Board contest on page #6.

Another study [9] shows that precincts with older voters, who may be more susceptible to such ballot distractions, experienced a higher undervote rate. Some suggest that older voters may be more susceptible to such ballot complexities than younger voters.

6.2.1.6 Reports that The Voter Choice and the Displayed Values Do Not Agree.

Overview: We consider the possibility that the update of data structures recording voter selection may not be reflected through updates in the information displayed on the screen.

Hypothesis: The recording of voter selection is a multi-step process, starting with the detection of a touch that matches a particular contest and candidate/choice. The choice is recorded to RAM and a subsequent call is made to the display functions. A situation with improper serialization of operations or improper synchronization might lead to erroneous information being displayed to the voter.

Enabling technology: The iVotronic machine allows interrupt-driven processing, as we describe in detail in Section 6.3 below. This allows the execution of machine instructions from an interrupt handler between two statements that appear as consecutive in the application code. If these instructions could update or change variables that change control flow between the time when the structures are updated and the display is called, this could lead to a lack of faithfulness in the information represented to the voter.

Technical analysis: The voting sequence was reviewed from the voting session start to ballot casting. All the updates to the data structures recording voter intent were traced through the code.

The user interaction sequence could be summarized as follows:

- (1) A touch is detected and matched to a screen position corresponding to a valid choice.
- (2) If this choice corresponds to a contest selection choice (other possible choices are, for instance, to change the ballot page), then a set of checks is performed to decide if the choice is valid. While a de-selection choice is always valid (unselect a candidate or YES/NO choice for a proposition), the same is not the case for a positive selection. For instance, if the contest allows for multiple candidates to be selected (not the case with CD13) and the voter has already made enough selections, the attempted selection is ignored. Other selections that are disallowed have been discussed in findings 6.2.1.3 and 6.2.1.4
- (3) If all the checks are satisfied, the selection state for the candidate/choice is changed. A function to refresh the current page is then invoked.
- (4) The refresh function scans all contests in the current page for one with a candidate or choice whose selection state has changed by comparing the current selection state to the previous selection state. This contest is then re-displayed, by writing its current state representation to the screen memory buffers. The refresh function also updates the previous selection state for the candidate/choice to the current state.

We note that the application code must make explicit calls for the touch screen controller to update the variables indicating where the last touch occurred. Moreover, once in step (1) the application code detects the location of the touch and resolves which contest candidate/selection it matches, it no longer polls for touch events, ignoring all user input until after the refresh call is performed (or the change is rejected, if the selection is disallowed through a failed check as described above). Therefore, it is not possible for the user to interrupt the normal execution sequence by (for example) selecting to go to a new ballot page before the code has completely processed its prior input. This includes touch screen input and input from buttons, such as the vote button.

The only parts of the code that modify a candidate's current selection state are those that perform the checks in steps (2)-(3). The only part of the code that modifies the previous selection state of a candidate is code that displays a modified contest in step (4). Therefore, if a touch is detected and matched and a change of selection correspondingly triggered for the contest, the code to refresh the contest representation in the screen will be called.

The refresh display code writes directly and synchronously to display buffers. The screen driver displays the changes the next time the screen is refreshed (asynchronously), which happens at a relatively high rate. Meanwhile, the code will have returned to wait for a new user selection through the touch screen or the vote cast button.

We note that the touch screen controller is relatively slow, in particular much slower than the display refresh rate. This makes it highly unlikely that a voter could make a (de-)selection in a race, and quickly browse to another page before the display is updated to reflect the changes. In fact, quickly pressing the screen at different screen positions will not register a touch since the touch screen controller filters out rapid or random touches. While this may be frustrating to the user experience, a discarded user input has no impact on a mismatch between display and recorded voter intention.

Finally, even if the user were not to notice a screen update before moving to another page, due to distraction, haste, etc., the current selection state for candidates/choices would be displayed correctly in the summary pages as well as if the user were to re-visit the page, either by browsing back or through the re-vote process. This is because when a page is displayed anew all the contests are displayed using the current selection states for the candidates.

Our analysis was aided by the fact that the iVotronic code is single-threaded. The only source of concurrency is via interrupt handlers.

Enabling factors present in Sarasota: The relative slowness of the touch screen controller may have contributed to some voter dissatisfaction and comments that it was difficult to make selections in some races. This could have been exacerbated in those contests that appear in particular screen positions, since in our testing of the touch screen we noticed that screen responsiveness could vary as a function of finger angle to screen, for instance. The fact that the CD13 race was the first on the top of a page may have been a factor in an increased number of complaints by voters that it was difficult to record choices in that race.

Mitigating factors: Ideally, all touch screens should be re-calibrated and tested prior to an election to ensure performance quality parameters.

6.2.2 Findings Regarding Recording of Votes

6.2.2.1 Prospective Software Faults During Transfer From Volatile to Non-Volatile Memory.

Overview. The iVotronic voting process requires the votes registered on ballots in volatile memory (RAM) be transferred to non-volatile memory (the internal triply-redundant terminal flash) when

the voter completes their selections and casts their ballot by pressing the vote button. Such data transfers are a natural place to examine in response to the reported anomalous data patterns.

Hypothesis. We analyzed the iVotronic firmware to identify potential flaws that could cause multiple vote images to be modified by a single voter session. If possible then this would reduce the necessary occurrence of an error from 10,000+ (the number of undervotes) to several hundred (the number of voting machines), since a single error in each machine could affect all votes on that machine.

Technical Analysis. The team spent combined approximately twenty hours reviewing all the code capable of writing to the non-volatile (terminal flash) chips. There are three terminal flash chips, each of which contains a copy of the ballot images (e.g., each voter's selections on the ballot). The process of writing to a terminal flash is more complex than writing data to RAM since each write operation to terminal flash must be preceded by a write-enable command. The write enable requires that a specific command word be written to the start of the flash memory sector; without the write-enable command, any subsequent write operation would be nullified. This makes it much more difficult for an errant memory write operation to corrupt the ballot images stored in terminal flash. Code that enables writes to the sectors containing ballot images exists in a single location in the firmware code. This location performs a write of a single, complete ballot image (copied from RAM). The only other operation performed on these sectors of the terminal flash memories is complete sector erasing.

A close inspection of the code reveals that actions from a single voter cannot modify the ballot images previously written to terminal flash. Furthermore, the code that writes a new ballot image to terminal flash is careful to avoid overwriting previously written ballot images: it identifies where current ballot images reside and writes the new ballot image to an unused portion of the sector. There is some randomization in the selection of which sector a ballot image will be written (to provide anonymity to the voter by avoiding ordering ballot images in the same manner as the votes were cast), but proper checks are made to avoid overwriting prior ballot images or writing partial ballot images due to memory storage full condition. Once a sector is chosen, ballot images are stored sequentially in that sector until that sector is full. If the selected sector is full, an alternate sector will be chosen.

The code reveals that it is possible that a ballot image would not be written if all sectors were full when the write is attempted. This event would generate an emergency shutdown condition, all prior ballot images would be retained in persistent memory, and the event log is appropriately updated to reflect the emergency shutdown condition. This event is unlikely to occur in practice due to the capacity of the terminal flash to hold many ballot images.

Mitigating Factors Present in Sarasota. Most of the voting machines contained dozens or hundreds of ballot images at poll closing. This is far fewer than the storage capability of the terminal flash memories. No voting machines contained enough ballot images to fill the terminal flash memory necessitating an emergency shutdown.

6.2.3 Findings About Terminal Closing Processes.

6.2.3.1 Examine Potential Flaws When Transferring Results from Terminal Flash.

Overview. We analyzed the firmware to identify potential flaws in accumulating and extracting results from the iVotronic. Results may be extracted either by writing the terminal flash images (event log and vote images) to an inserted compact flash card or by uploading them through the serial port/modem.

Enabling Technology. Two separate routines are used for reporting terminal flash results to a compact flash card or to the serial/modem port.

(1) In the case that the results are written to a compact flash, one routine is called. This function checks to see that enough space is available on the compact flash card to hold either one terminal flash image (2 megabytes) or all three terminal flash images (6 megabytes). The choice of whether to copy one flash image or all three is made by the user and selected via an administration screen. If enough room is available then the contents of either one or three of the terminal flash images is written to the compact flash card. This operation writes 31 sectors of 128 blocks of 512 bytes per block. The last sector on each terminal flash chip is not written, but this sector contains only utility information not relevant to any audit. The actual data transfer is performed by a COTS library function `po_write()`, which provides a low-level interface to the compact flash.

(2) Reporting flash images over the serial link is performed by a different routine.

These two methods of reporting correctly reflect the contents of the terminal flash memory relevant to accessing vote image and event data. They also serve as a semi-independent check of the functionality of the other.

6.2.3.2 Do Audit Log Functions Record Events Properly?

Overview. We consider whether the audit log functions can fail to record events that they are called to record.

Hypothesis. An event occurs that should be listed in the audit log, such as closing the polls and reopening them, but is not shown when the log is examined. This situation would not cause or explain any undervotes itself, but it would explain how an auditable action that would cause the undervotes might not be recorded.

Enabling Technology. We consider how the audit log subsystem works, focusing on the logging functions. On the iVotronic, the audit log is also known as the event log.

Technical Analysis. The audit logs are stored in terminal flash during the voting. Three copies of the log are kept, and they are written sequentially (that is, the first copy is written, then the second, then the third). Audit log records are stored in an area called the “event queue”, which is stored in specific flash sectors. The bytes in terminal flash memory are bitwise initialized to zero. In what follows, think of the event queue as an array of event records stored in the elements of the event queue.

An event record consists of a numeric event code, the time the event is recorded, the serial number of the PEB involved, and the type of PEB (Supervisor or Voter). When the event log subsystem is initialized, it sets a variable to the beginning of the unused section of the event queue. It assumes events are written sequentially, so if there are events in the queue, it skips over them until it finds the first unoccupied element. This initializes the audit log subsystem.

The routine that records events takes a parameter indicating the event to be logged. The record is constructed and added to the event queue and is written to the event log in terminal flash. If the event queue is full, an “emergency close” routine is called. That routine immediately calls the routine that records events, causing an infinite recursion. The calling stack would grow until a hardware fault occurs. This could overwrite much of memory. It would undoubtedly cause the terminal to crash, freeze, lock up, or cease operating properly.

Mitigating Factors Present in Sarasota. While there were several reports of terminals locking, audit logs did not show improper terminal closing or events that would indicate that this situation occurred. Moreover, event log storage space is sufficiently large that only an extraordinary voter volume could cause memory to fill.

Potential Remedy. The vendor could fix the interaction between the routine that records events and the “emergency close” routine to handle the case of the audit log being full. Also, election officials could check that all terminals are properly closed on Election Day, and that closing is properly reflected in the audit logs.

6.3 Findings Related to Asynchronous Processes

Overview. While the iVotronic has only one main thread of control, it does include hardware interrupt handlers, which read and/or update global variables. When a variable is read or updated concurrently by the main thread and interrupt handlers, there is a risk of timing-dependent errors, usually called “race conditions”. Race conditions are difficult to detect in testing, because the combination of event timings that results in erroneous behavior may be very rare, and may depend on random events and minor variations in hardware tolerances that cannot be directly controlled or reproduced. Therefore, one cannot rule out, a priori, the possibility of timing-dependent errors involving asynchronously updated variables in the iVotronic.

Hypothesis. A timing-dependent error involving interaction between the main program and hardware interrupt handlers might cause erroneous behavior on some machines during the election, that would not show up on other machines or during pre- and post-election testing.

Enabling Technology. We considered the interactions between interrupt handlers and the main thread, through global variables, looking for potential race conditions.

Technical Analysis. We searched the code for indications of multi-threading. While there are comments in a few places that mention “thread” and “multi-tasking”, we were unable to find any indication of multiple threads in the executable code. As far as we can tell, the iVotronic software runs directly on the main processor hardware, with no operating system kernel, and the main program is the only thread of control other than the asynchronous hardware interrupt handlers. Apparently, the main program is reloaded and called each time a new voter session is started.

We reviewed all the sources of hardware interrupts, and all of the hardware interrupt handlers, to understand their interactions with the rest of the iVotronic software. We enumerated all of the global variables read or modified by hardware interrupt handlers or by functions called (directly or indirectly) from hardware interrupt handlers. We then examined the places in the main program and the subprograms called by the main program where references are made to those variables.

We first verified that the asynchronously updated variables are all of a size that permits them to be read and written atomically by the main program; that is, it is not possible for a hardware interrupt handler to execute between the reading/writing of one byte of the variable and the reading/writing of the rest of the variable. All of the asynchronously updated variables passed this check.

We then attempted to verify that all such variables were declared as “volatile”, so that the compiler would not perform unsafe optimizations (e.g., suppression of apparently-redundant load and store operations) on them. Most of the asynchronously updated global variables were not declared to be volatile, but we do not believe this mattered with the particular compiler used on the iVotronic software. That is, with there being so many cases, if the compiler performed optimizations of the kind that would be unsafe on these variables: (a) the results would probably have been detected in testing; (b) the probability of failure would have been uniform over time, affecting all races with equal probability; (c) the failures would be exhibited in ways other than just undervotes.

We next classified the uses of the asynchronously updated global variables, according to usage. Most of the uses conformed to one of the following generally-safe paradigms:

(1) Count-down timers. A software count-down timer is a global variable that is decremented periodically, in these cases by the hardware timer interrupt handler, until it reaches zero. The main

thread uses a count-down timer to delay for a given length of time, by setting the timer to a positive count (usually a count of milliseconds) and then looping until the timer value has reached zero. This usage pattern is generally free from dangerous race conditions, so long as the variable is of a size that can be read atomically by the main thread, and only the main thread sets the value of the timer. If an interrupt handler may also reset the timer, it is possible for the main thread to delay for a longer or shorter time than expected. The iVotronic software contains several variables of this type, though we believe the code could be simplified by consolidating some of these timers.

(2) Counters. A software counter is a global variable that is incremented periodically, in these cases by an interrupt handler. The main thread uses a counter similarly to a count-down timer, by initializing the counter to zero, and then looping until the value passes some limit. This usage pattern is generally free from race conditions, so long as the variable is of a size that can be read atomically by the main thread, the code that increments the counter stops before the variable can overflow, and either the main thread uses “>=” or “>” (rather than “=”) to check the timer, or the incrementing code stops at some moderately small value. The iVotronic software contains several variables of this type. They appeared to be used correctly. However, the code could be simplified and made more readable by consolidating some of the counters, and by adopting a more uniform policy of using just the count-down or just the count-up paradigm, rather than the present apparently arbitrary alternation.

(3) Read-only static variables. A read-only static variable is updated by the interrupt handler and read by the main thread. This usage pattern can be safe if the size of the variable allows for it to be read atomically by the main thread, and the logic of the main thread takes into account the volatility of the value of the variable. The iVotronic software contains many variables of this type, including those that keep track of the device model and serial number (presumably not changing, once set), whether a PEB is currently inserted and the type of PEB inserted (changing, but not ordinarily changing during the casting of a single ballot), and the X and Y coordinates of the last event on the touch screen (changing rapidly). While we did not find any specific errors in the usage of such variables, we did find that the need to continually poll for changes in these variables made the logic of the main thread difficult to follow.

We also verified that the interrupt handlers were either coded in a re-entrant-safe fashion or took steps (e.g., disabling interrupts) to ensure that they would not be called re-entrantly. We also examined all code that disabled interrupts for a lengthy period of time; no problems were detected.

A characteristic of this software architecture, in which the main program polls for changes made to global state variables by interrupt handlers, is that there may be variable delays in the responses to external events, depending on what the main program is doing when the event occurs and how soon after the event it checks the corresponding global state variable. In the worst case, an event may fail to be detected entirely, if the main thread does not check the corresponding global state variable before it is again modified by a subsequent event.

For example, when a voter touches a location on the touch screen, an interrupt handler records the fact that the screen has been touched in a global state variable, and also records the X and Y coordinates of the touch. If the main program does not check these variables before the voter touches another location, the first touch will be ignored. This is consistent with observed behavior of the iVotronic, i.e., if a person touches two locations on the touch screen in rapid succession the system will ignore the first touch. There is no problem in this case, since the voter can see whether each touch was registered by whether a corresponding “X” that appears on the screen. In fact, this behavior may be desirable, since the last touch point would normally be the one the voter intends.

Finally, we examined whether the various libraries we did not read (see Section 5.6) may have interrupt handlers or sections where they disable interrupts. We considered this possibility highly

unlikely for three reasons (1) We did not see any functions performed by library calls that would logically require an interrupt handler. (2) The library code is a generic, off-the-shelf product intended for embedded applications. It would put too large a burden on customers to design systems that use interrupts if the users did not have visibility of all interrupt handlers. To avoid IRQ number conflicts, the application would need to be involved in setting up the mapping from IRQ number to handler entry point. (3) In the section of code that sets up interrupt handling vectors, we did not find any references to function entry points not present in the code we reviewed.

6.4 Findings Related to Election Audits

6.4.1 Suggestions to Improve Audits

Overview. During this review we realized that certain enhancements to the iVotronic audit logs could have made the code review and audit easier and/or more complete. Based on our experiences in this work, we believe that there are opportunities to augment voting systems in ways that would significantly enhance our ability to perform meaningful election audits after the fact. We present these observations here.

Paper Trail. A paper trail would have served to confirm that votes were not altered after they had been recorded. In this case, the code review to check that ballot images were not altered after they had been recorded was fairly easy, if we assume the absence of malicious activity. If some voters verified that the paper trail was an accurate record of their intent before casting their ballot, then the number and contents of spoiled paper records would provide additional evidence to an audit regarding how many voters reached the review process without selecting a candidate in CD13 and how many successfully voted in CD13 thereafter. However, there is no reason to believe that a paper trail would have prevented the anomalous undervote. If many voters did not check the review screen, it seems likely that, all else being equal, many voters would also fail to check the paper trail. All in all, a paper trail might have provided some additional information to an audit, but likely would not have prevented the high undervote rate and likely would not have eliminated the controversy.

Voter Action Log¹. If the audit logs had been expanded to record all user interactions with the system, this would have permitted a more detailed analysis of the cause of the CD13 undervote. This expansion appears to be feasible, since the storage capabilities of modern voting machines far exceed the requirements for logging screen touches and screen contents.

Such a system would have two major advantages and one minor advantage not found in existing touch screen audit mechanisms. The first is that issues of voter confusion of the ballot structure or machine interactions can be studied at the conclusion of the election. This can provide valuable feedback for improving the specifications for ballot designs and for the operation of future voting systems.

The second is that a full log of all user interaction might reduce our reliance on code review and enhance confidence in the results of any audit. The most complex code in the iVotronic is the user interface where selections were made and displayed. The undervote question involves whether the voter selection was an accurate reflection of what the voter saw on the display. The complexity of the user interface code made it difficult to answer this question with confidence. A log of all user interaction would provide a way to sidestep this difficult code review problem. Auditors could inspect the log to examine voter actions for evidence to infer display accuracy rather than studying

¹ This idea originated in conversations between David Wagner and Steven Bellovin unrelated to this report.

the code to try to predict whether the code will always display the appropriate information under all possible foreseeable circumstances.

The third advantage, admittedly minor, is that a full event log containing all user interaction enables a semi-independent way of tallying the votes assuming the ballot used is known and the voting terminal displayed the ballot properly. An independent system can read the event log and, using only that information, can count the votes for each candidate in each race. While this does not help to verify that the votes were recorded correctly in the first place, it might provide a way to check that the tabulator summed up the votes correctly. The system or systems calculating votes from voter logs can be developed by a different company than the electronic voting machines, or by multiple different developers.

One problem is that there are significant unsolved vote secrecy problems with this mechanism. A full log of all user interactions creates a covert channel through which a voter could transmit evidence of how she cast her vote. This enables the voter to sell her vote or to be coerced, and, of course, such an interactions log would have to be stored in a way that does not compromise the privacy of the voter.

7 Security-Related Findings

As one component of the code review, we analyzed the security of the iVotronic firmware to determine whether fraud or computer intrusion could have caused or contributed to the CD13 undervote. This section details our findings about the security properties of the system that might be relevant to the CD13 undervote.

We discovered several software vulnerabilities in the firmware. We are convinced that none of them were exploited in Sarasota in a way that would have caused or contributed to the CD13 undervote. We present these threats as pertinent to this report under the Statement of Work because we cannot absolutely rule them out as a possible contribution to the undervote.

Our security findings relate to external data in four areas: PEBs, Compact Flash cards, modem operations, and password handling. External communications are natural targets that intruders might try to attack. While our analysis of modem operation did not reveal any software vulnerabilities, we discovered software security vulnerabilities in the other three areas. It is our assessment that none of them were exploited in Sarasota. We give our reasoning in more detail below.

There is a natural inclination to try to represent the following attacks with a probabilistic model that identifies a list of preconditions that would be necessary before an attack is possible and then treat each of these preconditions as independent events. If each such event is unlikely and the events are independent, then the probabilities multiply, yielding an attack likelihood that is statistically insignificant or even indistinguishable from zero. For instance, if we identify 10 such events, each occurring with probability $1/2$, then the total probability of a successful attack is less than one in a thousand.

While this argument is intuitively appealing, it is also inherently flawed. There are two problems. First, these events are not independent. Often, if we assume a sufficiently motivated and skilled adversary, many or even all of the preconditions may pose no problem for such an attack.

Second, there is no way to scientifically or systematically assign probabilities to the events. This is true for many reasons, but we give two here. First, there are no current or historical records upon which to found an estimate of these probabilities. We can prognosticate about the likelihood that someone can, for example, steal a voting terminal from a controlled space, but prognosticating is the best we can do and different prognosticators may predict dramatically different values with no scientific way to reconcile the difference.

Finally, attacks are not random. Attacks are deliberate human acts, not acts of nature. This makes the presence or absence of attacks hard to predict and limits the usefulness of probabilistic models based on random behavior. Further, we are not aware of any Byzantine models that capture the particular features of this situation.

In Table 1, we identify conditions that would have to occur for an attack to be successful. However, as argued above, the number of conditions found in Table 1 cannot be used as a measure of the ease or difficulty of attack; instead, a more nuanced analysis is necessary.

Table 1 is a simplification, and it disregards factors that may influence the difficulty of exploiting these vulnerabilities. For instance, source code for the iVotronic firmware would certainly facilitate development of the attacks described below, though it is probably not a necessary precondition. In any given circumstance, other items or knowledge may be necessary or helpful to execute an exploit.

Conditions to Exploit a PEB Virus
Must be a malicious, sophisticated intruder
They must acquire:
- one or more voting terminal(s)
- one or more PEB(s)
The virus must:
- be effectively injected
- propagate
- execute its designed attack
- delete any trace
Accomplish all of this undetected
Table 1. Virus Conditions

7.1 The Virus Threat

We identified several buffer overflow vulnerabilities that in a worst case scenario may allow an attacker to take control of a voting machine by corrupting data on a PEB. These create the possibility of a virus that propagates by exploiting the buffer overflow vulnerability. Viruses pose a serious threat to computer system integrity. Procedural and physical security defenses may reduce or mitigate virus risk but cannot guarantee attack prevention. Unfortunately, the testing procedures that are standard practice in the elections community are unlikely to discover these vulnerabilities or the presence of a virus. The vulnerabilities might be found through careful analysis of the voting machine's source code (as we have done). While it may also be difficult for a prospective attacker to discover these weaknesses, their presence opens a door for attack.

If these vulnerabilities were exploited, it would be possible to hide their existence. A cleverly constructed virus can cover its tracks so that infected machines could not be detected by ordinary means and an appropriately programmed virus could self-destruct and erase all its tracks.

It is possible that an outsider could trigger an attack and that once one machine is infected, the virus would spread from machine to machine through removable storage media without further attacker involvement. We give a detailed description of potential virus exploits in Appendix B.

7.2 Vulnerability Verification

Buffer overflow vulnerabilities are well understood, both practically and in the literature. There is no doubt that the bugs that allow buffer overflow attacks to occur are present in the iVotronic firmware. However, we did not implement exploits for any of these vulnerabilities. Moreover, in what we believe to be unprecedented cooperation, the vendor (Election Systems & Software (ES&S)) offered to provide us with iVotronic equipment and technical analysis so we could implement these exploits for demonstration purposes. We declined their invitation for two reasons. First, we are confident that we could implement a rudimentary attack in a reasonably short period of time, but we believe such a simple exploit is not revealing. Several laboratory attacks, e.g. [11, 12] provide convincing evidence that academically identified buffer overflows in voting systems can be

exploited in laboratory environments. Thus, there is little scientific benefit in constructing another elementary attack. Alternatively, we considered attempting to construct a more sophisticated attack, with all the features that a real attacker might implement. In the end, the team decided that such an effort was not necessary for our analysis. Nonetheless, we appreciate the vendor's willingness to provide the resources we would have needed.

7.3 Buffer Overflow Overview

A buffer overflow is a computer attack that results from copying more data than the destination area can hold, which results in writing over other data. Any buffer overflow bug constitutes a potentially dangerous defect. In the absence of malicious intent, it can produce unpredictable program behavior, but when the data being copied is carefully constructed, it can allow an attacker to transfer program control to her own malicious code. Once this happens, the attacker controls the machine.

Buffer overflows result from trust that the software places, inappropriately, in data from an external source. In the iVotronic firmware, the software implicitly trusts that the election definition file in the terminal's flash memory was generated by a legitimate entity. This assumption is not universally justified.

Not all buffer overflow defects are exploitable. Input filters, operational procedures, and even good fortune may establish an environment where a buffer overflow cannot be exploited to take control of the machine.

7.4 Propagation Mechanisms

Viruses that can infect only a single machine or a few machines are rarely dangerous. It is well known that viruses can propagate through removable storage media. The two prospective removable media on the iVotronic each have software security vulnerabilities.

7.4.1 Compact Flash (CF) Cards

The CF card stores an election ID file and a set of audio (.WAV) files that support various election functions. The code that reads one of these files from the CF card exhibits a classic buffer overflow vulnerability. It reads a variable-length string from the CF card and stores it into a fixed-size array in memory without size or other validity checks. If a malicious party embeds the data on the CF card, an overly long string can overwrite the return address on the stack and cause execution to jump to malicious code that was loaded into memory from the CF card.

To assess the risk associated with the CF vulnerability, we contacted Florida election officials, Sarasota County election officials, and vendor employees to understand how CF cards are handled during election administration. Here is our understanding of the processes in use in Sarasota County. (Any errors in this description are our responsibility. We thank election officials for their assistance in understanding election processes.)

Before the election, the election is set up on the election administration server at a central county location. A single CF card is written with the files needed for the election, from this server. This card serves as a master copy. The data on the master CF card is then duplicated, using CF duplication equipment, onto hundreds of CF cards, one for each iVotronic machine. Only four highly trusted permanent employees of the Sarasota County elections department have access to the elections administration server and to the master CF card before duplication. Before the election, a duplicated CF card is inserted into each iVotronic machine and the case is sealed with a tamper-evident seal by county election workers. Consequently, all CF cards contain exactly the same data before the start of the election, since they were duplicated from the same master copy.

The iVotronic machines are transported to the polling place with the tamper-evident seal intact. In ordinary operation, poll workers never need to disturb the tamper-evident seal. After the election is over and the machines are returned to the county warehouse, two county election workers verify that the seal is intact on every machine before removing the CF card. Consequently, the tamper-evident seal protects the CF card from the time the CF card is inserted by county workers until the time when the CF card is removed by county workers. Any attempt to gain access to the CF card before then will presumably be detectable because it would involve breaking the tamper-evident seal. After the election, the CF cards are inserted into a CF reader attached to a laptop or server at the county warehouse, the contents of the CF cards are uploaded to the election administration server and archived, and the CF cards are stored for reuse in a subsequent election.

This process seems excellent from a security point of view. Each CF card is associated with a single iVotronic machine. CF cards are not shared between machines, so there is no likelihood that they would form a route for infection to spread. The contents of CF cards are erased between elections, so even if a CF card were to come to contain malicious data during the course of one election, that malicious data would be overwritten before the CF card is inserted into another iVotronic machine for the next election.

For these reasons, assuming the above procedures were followed, we believe that the CF cards posed a very low risk of spreading viruses in Sarasota County. Given that the above procedures were followed, we do not see any way that an outsider could have injected a virus and caused it to spread among Sarasota machines using CF cards. It is to Sarasota County's credit that their procedures regarding the chain of custody and security protections for CF cards are able to defend against even unanticipated security threats such as this one.

7.4.2 The Insider Threat

The greatest security threat to any computer system is the insider threat. This certainly applies to voting systems.

We illustrate the hypothetical insider impact by discussing the master CF card. The master CF card is a critical item. If that card contains malicious data when it is duplicated, then the malicious data will be duplicated onto all CF cards, which might then cause the infection of all iVotronic machines. If the election administration server is compromised, the CF card could be loaded with malicious software at its source. Alternatively, if someone were able to swap the legitimate master CF card for an illegitimate CF card that had been prepared in advance, they could arrange that the illegitimate CF card contained malicious data. Thus, the procedures for handling of the master CF card before it is duplicated are critical. CF cards are small devices, about the size of a postage stamp. This would make it easy to conceal a replacement card.

One significant mitigating factor in this case is that under Sarasota County procedures, only four highly trusted individuals are authorized to access the election administration server and the CF cards. This reduces the risk because it limits the number of people with an opportunity to exploit this vulnerability.

It was outside the scope of this report to perform a comprehensive review of the physical and operational security of the Sarasota County elections department.

7.4.3 The Potential for a PEB Virus

In a second removable media vulnerability, the PEB is also a potential virus propagation vehicle. Once a device (terminal) is infected by a PEB, that terminal may infect other PEBs inserted into it. Thus, if PEBs move between devices within a precinct, the virus could spread from machine to machine and from PEB to PEB. If terminals move from precinct to precinct, the virus can propagate

throughout the county over time. Though the vulnerability that we discovered depends upon what operations are invoked on the machine (see Appendix C), it is still possible for a PEB virus to propagate if those operations are triggered with sufficient frequency. For example, triggering the voting operation with a malicious PEB will not propagate a virus, but opening the polls or printing reports on an iVotronic may pass on a virus.

This is a critical point in analyzing a potential virus exploit in the CD13 race, because an infected PEB cannot propagate the virus unless a terminal with that PEB inserted executes an unsafe operation. We detail this mitigating factor in paragraph 7.5.2.

Thus, an attacker may need to target a Master PEB in order to improve propagation likelihood. The Master PEB is important because it is used to open every terminal in a polling place, and the process of opening the polls is an unsafe operation. Thus, an infected Master PEB might infect every terminal in a polling location, though the virus could only spread to other precincts during a subsequent election.

A sophisticated virus attack might also attempt to infect a supervisor terminal. Supervisor terminals are a central point of risk, since an infected supervisor terminal can infect many PEBs prepared for a given election. We emphasize the need to carefully guard access to supervisor terminals and limit the operations that are performed on PEBs that are inserted into them.

The PEB vulnerability arises from an architectural flaw in the iVotronic source code design. During our source code analysis, we found many PEB-related security bugs that could be used by a virus. These bugs were similar in nature and are instances of the same architectural flaw. Significant additional discussion about PEB viruses appears in Appendix B.

7.5 Mitigating Factors

7.5.1 Supervisor Terminals in Sarasota

We noted above that supervisor terminals make excellent virus attack targets because they can have a much wider impact than voting terminals. The procedures in Sarasota mitigate the risk to some extent. For example, in Sarasota, supervisor terminals are stored in the secure Data Acquisition Reporting Center (DARC room) within the Supervisor of Elections office. Sarasota maintains fifteen supervisor terminals and uses only a subset of them for each election. For example, in the November 2006 election, Sarasota used six supervisor terminals. While infecting one supervisor terminal would be damaging, this policy would likely localize the impact.

7.5.2 Propagation Limited by PEB Operations

As we mentioned above, terminals can only be infected by corrupted PEBs if certain operations are executed while those PEBs are inserted.

It is important to note that the hypothesized PEB virus cannot be passed during the most frequent, and in many cases exclusive PEB operation: voter initialization. That is, the voter initialization operation is *safe*.

Also, an attacker might find it difficult to build a PEB that exploits all unsafe operation without noticeably interfering with the safe operations. If this were the case, it could complicate construction of a virus or slow its spread. We have no specific reason to believe this to be the case, but because we have not implemented a working exploit for the reasons stated above, it is hard to know what difficulties a virus writer might face.

7.5.3 PEB Handling Procedures

Removable media virus propagation properties are well understood and are easily estimated when we can assume random assignment of machines and media and machine to polling places. In our initial analysis, we generated a simulation that assumed such random behavior. Using that data, we estimated that a PEB virus would take four to six elections to propagate throughout the county. Closer evaluation identified PEB and terminal handling procedures that mitigate this threat. Specifically, PEBs do not move between precincts between primary and general elections. Thus, even if all PEBs in a particular precinct became infected during the primary, they would not be distributed among other precincts so the virus could not propagate further via PEB distribution between the primary and general elections.

Of course this does not prevent propagation since infected terminals can also spread a virus. In Sarasota, terminal distribution is less uniform, but definitely non-random. Specifically, terminals are stored on pallets in the county warehouse between elections. If after a primary each terminal from an infected precinct were assigned to a different precinct for the general election, the number of terminals in that precinct is the upper bound on the possible number of propagated precincts. More realistically, we were told that Sarasota stores terminals in the warehouse in such a way that they naturally retain a temporal clustering. While they may not be reassigned to the same precinct in the next election, they are likely to be removed from the warehouse and assigned to polling places in the next election in an order that is correlated to the order in which terminals were collected in the last election, causing a clustering effect. This kind of clustering would slow the propagation rate.

7.5.4 PEB Inventory Control

We were informed that, in Sarasota, PEBs are bar-coded and carefully inventory controlled. During non-election periods, they are stored behind three-tier locks, within the supervisor's office, inside the security controlled DARC room, and locked in cages. Of course an attacker may obtain a PEB from somewhere other than Sarasota County, but it is noteworthy that Sarasota strongly protects their PEBs between elections.

7.5.5 No "Shrink-wrap Effect"

One factor facilitating the spread of viruses on the modern Internet is "the shrink wrap effect", where many users use the same software and where attack mechanisms are well known and are even published on the Web. Because shrink-wrapped software is in widespread use, there are many potential targets and there are many people able to acquire the information and skills necessary to create such a virus. The iVotronic architecture is not subject to the shrink wrap effect. It is special purpose hardware and software whose architecture and implementation details are protected from wide distribution. Only sophisticated attackers with specific goals could exploit these vulnerabilities and they could only confidently perpetuate the spread of such a virus with extensive preparation and perhaps a bit of luck.

7.5.6 Virus Developer's Tradeoffs

While virus writers may exercise an immense variety of attacks and deception techniques, these techniques are subject to tradeoffs. For instance, if an attacker chooses to propagate a virus from machine to machine, she introduces the possibility that the virus could be detected by someone who knew how to look for it. FLDoS conducted such an integrity check during the ongoing audit process. In their test of six iVotronics terminals used during the election, FLDoS extracted the removable iVotronic firmware EPROM chips, placed them in a commercial EEPROM reader, and saved the firmware image into a bit-image file. They compared these extracted images to an image

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from the software's secure build process conducted by the federally approved independent testing authority that certified the iVotronic and they were identical. This provides strong evidence that no virus was resident in these iVotronics after the election and therefore strongly suggests that no virus was present on Sarasota terminals after the election.

Conversely, if virus writers elect to cover their tracks and destroy all evidence after they accomplish their task, they limit their impact by limiting their ability to perpetuate themselves.

7.5.7 Controlled Hardware and Software

The PEB is a special purpose device that is not available off the shelf. While limited availability does not provide strong systematic security, it does eliminate the shrink wrap vulnerability.

Additionally, a prospective attacker would almost certainly need to acquire one or two voting terminals for use in preparing the virus, likely through theft or fraud. The attacker would need to prepare the attack well in advance, easily taking weeks or months of technical work to create such a virus. These factors significantly reduce the potential attacker population.

7.5.8 A Sophisticated Intruder or an Insider

Some activities we describe are most easily accomplished by trusted insiders. However, insiders accept risk of suspicion as well. Additionally the number of insiders with the access and opportunity to mount this kind of attack is limited and their identities and responsibilities are well-known.

A virus-based attack by an outsider would certainly require considerable technical sophistication and preparation. Such an attack certainly could not be mounted by the average person on the street, by the average computer user, or probably even by the average software developer. The attacker would need to be skilled in computer programming and in the exploitation of computer security vulnerabilities, with broad and deep understanding of computer software and reverse engineering.

7.5.9 Margin for Error

One challenge facing any would-be attacker is the low margin for error in mounting this kind of attack, and software developers well know that perfect software, including attacking software, does not exist. If the virus contains a bug or programming error that causes it to behave in a way different from how its creator intended, that bug might have effects that could disable the attack, cause it to be detected by election officials, or expose the attacker's identity and methods to forensic analysis.

Just as all application code has defects, attacker code is also subject to defects. Moreover, it would be difficult for an attacker to test virus operation rigorously in the lab before injecting it into the wild, so an attacker would have to be concerned about the possibility of bugs in her code. There is no clear way for an attacker to influence or control the virus after it has been introduced into the system, so if she wants to remain undetected, the attacker must plan to succeed on the first try. Even with the most careful precautions, complex first try attacks are not guaranteed to succeed.

7.5.10 Temporal Proximity

Another significant mitigating factor is that, because of the delay in the spread of the virus, unless the attacker has special insider access, the attacker would need to prepare the attack in advance and inject the virus well before the election that has been targeted for attack. For instance, if an outsider wanted to manipulate the November 7, 2006 general election, the attacker would have had to fully prepare and program the virus well in advance: at a minimum, because of the complexity of the attack, we believe that the virus would have to have been introduced before or during the August 2006 primary election and probably earlier, thus could not be candidate-specific. The virus would be a "fire-and-forget" weapon: the attacker probably could not change its programming or targeting

after it was introduced. This means that the attack would need to be highly premeditated and well planned. An attacker could not mount this kind of attack on the spur of the moment or on a whim.

7.5.11 Decentralized Election Administration

An additional mitigating factor is that because each county ordinarily administers its own elections and counties do not share equipment, a virus would not spread outside the boundaries of a single county. An attacker who wanted to influence the election in multiple counties would have to inject the virus in each targeted county, and introducing the virus requires some kind of physical presence. This cannot be performed by someone living in some other country on the other side of the world or even someone in a neighboring county because these devices are not connected (for example, by a network). The attacker would have no way of knowing whether their attack would successfully change the outcome of the election.

7.6 Assessing the Factors

Taking into account all of the factors examined above, we judge there are strong reasons to believe no such virus was present during the November, 2006 election. To explain the observed undervote rate in Sarasota, Charlotte, and Lee Counties [8] (also see Section 8.1) all being caused by a virus, we would have to assume that the attacker separately attacked each of these three counties, at a corresponding increase in risk of getting caught. Also, as the discussion above highlights, these attacks would require substantial technical sophistication and extensive advance preparation. If an attacker had the capability to mount such an attack, the attacker could have exploited this capability in a far less noticeable way (e.g., by silently switching votes from one candidate to another instead of creating a high, attention-grabbing undervote rate). It is not clear what would motivate an attacker to use these capabilities in this way. Furthermore, there are other plausible explanations for the CD13 undervote that do not require such unlikely assumptions.

Finally, we found absolutely no evidence of any attack in Sarasota County that caused or contributed to the CD13 undervote, although we acknowledge that a highly sophisticated, perfectly executed attack might leave no evidence.

7.7 Modem Communications

We also investigated whether a virus might be able to spread by modem. After the polls are closed at the end of Election Day, an iVotronic may be connected to an extra “communications pack” device. The communications pack contains a modem that can transmit the election results to the county’s central server’s Data Acquisition Manager (DAM) over the phone. After examining the iVotronic source code, we could not see any way that a virus could spread from the Unity server to an iVotronic machine. Very little data is transmitted from the Unity server to the iVotronic machine, and that data is handled by the iVotronic code in a safe way. We did not see any buffer overruns or other security vulnerabilities in the code that handles data received from the Unity server. Consequently, we believe there is no way to infect an iVotronic machine over the modem.

Moreover, Sarasota collection procedures do not involve connecting iVotronic machines to modems. Rather, PEBs are transported to four regional sites where they are entered into a laptop computer through a PEB reader and the results are reported via modem connection to the election central. The modem connection is manually synchronized via a separate phone connection.

7.8 Fixing the Virus Vulnerabilities

The misplaced trust in PEB data gives a prospective attacker several optional exploits that existed in the code during the CD13 election. It was beyond the scope of this review to identify an exhaustive list of all places in the code that may be vulnerable, since much of the firmware was not executed in Sarasota. All vulnerabilities must be eliminated or mitigated before the software could be considered secure.

Fixing these vulnerabilities is likely to be non-trivial because it requires fixing a flaw in the architecture and architectural flaws tend to be more difficult to fix once they are implemented. The software needs to avoid trusting inputs from untrusted sources. This would require introducing input validation and defensive programming through much of the code.

7.9 Procedural Defenses to Remediate These Vulnerabilities

Until the iVotronic firmware is modified to fix these vulnerabilities, there are a number of procedural defenses that election officials could use to defend against the virus threat.

1. Each terminal and each PEB should be assigned to a single precinct. This assignment should never be changed or rotated among precincts and should remain fixed for the lifetime of the equipment.
2. Master PEBs should be strictly controlled using procedures similar to those applied to paper ballots. They should be constantly under lock and key during the voting day, with sign-out and sign-in procedures to maintain the chain of custody at all times.
3. Polling place procedures should minimize PEB cross-pollination: i.e., minimize the number of terminals that any particular PEB is ever inserted into and minimize the number of PEBs that are ever inserted into any given terminal. For instance, officials might set an upper bound of 5, specifying that no PEB be used with more than 5 terminals and no terminal be used with more than 5 PEBs. Optimally, a poll-worker with a PEB would be assigned a set of terminals, no other PEBs would be used on those terminals, and that PEB would never be inserted in any other terminal.
4. Supervisor terminals should be rigorously controlled. No unsafe operation should ever be performed on any supervisor terminal, if it possibly can be avoided. (See Appendix C for a list of safe and unsafe operations.)
5. Numbered tamper-evident seals should be used to deter tampering with the CF card slot. Logs should be kept of all seals applied and/or removed, and two-person controls should be applied when election workers handle CF cards.

Many of these procedures are in place in Sarasota County and their practices inspired some of our suggestions.

7.10 Passwords

A general security review is beyond the scope of our task. However, we detected significant password weaknesses that may allow an intruder to inject a virus into a terminal if they are given unsupervised access. We could not construct any scenario where password exploit could have caused the undervote symptoms without injecting a virus into the system. See Appendix D for further discussion of the password issues.

7.11 Security Summary

Our security analysis revealed several software defects that could allow an attacker to introduce a virus into the voting system that spreads through removable storage devices. We cannot absolutely

rule out the possibility that an attack was mounted during the November, 2006 general election. It is in principle possible to mount an attack that would leave no trace after the election is over and it is impossible (by definition) to detect such an attack. However, we found no evidence of an attack and there are strong reasons to believe that these vulnerabilities were not exploited in a way that caused or contributed to the CD13 undervote.

8 Analysis of Hypotheses

Team members and others have proposed numerous hypotheses that might explain the observed undervote. This section of the report deals explicitly with these hypotheses.

8.1 Assumptions.

We make the following assumptions based on information furnished by the Secretary of State concerning tests and activities not performed by our team. We did not independently verify them. We give textual names to each assumption for ease of reference.

SOURCE MATCH. The software used on the subject DREs was generated from the same source code that was examined by the team.

CVR CORRESPONDENCE. No discrepancy was observed among the following: (1) the summary tape generated on Election Day at the close of polls on individual machines; (2) the individual cast vote records ("CVRs," or "ballot images") recorded by the machines; and (3) the totals that were accumulated and reported by Unity.

OBJECT MATCH. The software present on the machine's internal EPROM after the election was the software originally certified.

TEST CONFIRMATION. No behavior was observed during the Secretary of State's testing that would have caused any valid selection in CD-13 to be altered or recorded as an undervote [10].

CHARLOTTE and LEE UNDERVOTE. Charlotte County observed an undervote of approximately 26% in the statewide race for Attorney General, and Lee County had a similar though slightly lower undervote rate in the Attorney General race. In Charlotte and Lee Counties, the layout of the Attorney General race was similar to the layout of the CD13 race in Sarasota County [8]. Other contests without the multiple-contest-per-page format did not have a high undervote rate.

If we hypothesize that the CD13 undervotes were caused by deliberate fraud, not by human factors considerations, then our hypothetical scenario has to include an explanation for why the Attorney General race in Charlotte and Lee Counties had such a high undervote rate. In other words, such a hypothesis has to assume that the attack was not limited to just Sarasota County, but also affected Charlotte and Lee Counties.

FLORIDA UNIQUENESS. We are unaware of any other jurisdictions in the United States that used the same iVotronic version that reported undervote percentages of the Sarasota and Charlotte Counties' magnitude.

8.2 Relevant findings from our source code review

The following definitions reflect observations made by the team based on source code review. We investigated these issues in a systematic and structured fashion and found no evidence to contradict any of these properties.

COMPLETE BALLOT. We observed no evidence during our code review of any defects in the code that would cause anything less than the complete ballot to be presented to the voter.

PROPER DISPLAY. We observed no evidence during our code review of any defects in the code that would cause the display screens presented to the voter to inaccurately reflect the ballot from the PEB or the selections made by the voter.

ACCURATE VOTE DATA. We observed no evidence during our code review of any defects in the code that would cause the ballot images recorded to terminal flash when the voter casts her ballot to incorrectly reflect the selections made by the voter.

FULL RECORDING. The preceding three properties necessarily imply that when voters pressed the vote button, the CD-13 race was present on the ballot and, if the voter did not make any selection in the CD-13 race, the screen for that race showed no vote for either candidate, and the review screen displayed the message “NO SELECTION MADE” in the CD-13 race. We note that our observations are consistent with the explanation that ballot design combined with the absence of a prominent undervote warning led to the high undervote.

NO MALWARE. We saw no sign of any malicious logic deliberately introduced into the code to rig the election by falsely recording undervotes.

NO SERIAL RACE EFFECT. No evidence was found that a selection (or lack of a selection) in any race affected any other race or question on the ballot in any way. That is, selecting (or failing to select) a candidate in race X did not affect the presence or absence of race Y on the ballot presented to the voter or the presentation of candidates in race Y, and did not affect the proper recording of the voter's selections in race Y or the appearance of the review screen in race Y. See Sections 4.1.7, 4.1.8, and 6.2.1.3 for further analysis.

NO SERIAL VOTER EFFECT. No evidence was found of any serial effect between voters. That is, as far as we can tell, the behavior of the machine for voter $n+1$ was not affected by any act performed or not performed by the previous voters 1 through n , assuming that voter n completed the act of casting a ballot.

NO TIME-SENSITIVE CODE. There is no indication of any time-sensitive code that would cause the machine to behave differently on Election Day than at any other time. We examined all of the source code that reads the clock and all of the code that uses any value based on a clock reading (directly or indirectly), and it was all innocuous. The amount of code in this category was limited enough that we were able to exhaustively analyze all of it, and we are confident that this code could not have contributed to an undervote.

NO VOTE PEB EFFECT. No condition giving rise to an “Invalid vote PEB” log event (of which 308 were recorded during the election) would cause the CD-13 race not to be displayed to the voter, cause a selection to be altered, or cause a valid selection to be recorded as an undervote. See Section 6.2.1.2 for further analysis.

NO SUPER PEB EFFECT. No condition giving rise to an “Invalid super PEB” log event (of which 48 were recorded during the election) would cause the CD-13 race not to be displayed to the voter, cause a selection to be altered, or cause a valid selection to be recorded as an undervote.

NO NETWORK EFFECT. No “networking” effects were observed, namely any condition occurring on machine B networked to machine A that would cause any ballot alteration or undervote on machine A.

NO PEB CLUSTER EFFECT. No “PEB cluster” effects were observed. That is, the fact that machines A and B in the same polling place were activated with the same PEB had no effect on any race on either machine or any other machine on which such PEB was used. In Sarasota, the PEB is removed from machine A before the voter votes, so no “state” caused by the voter can be transferred to machine B.

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8.3 Malicious Software Hypothesis

If the software used on the subject DREs was not generated from the same source code that was examined by the team, then the team's observations from examining that source code would be irrelevant. If the software on the machines was different, it must have been altered before or during the election, the altered version used during the election, and the altered software must have been subsequently replaced by the original certified version since this is the version that is now resident in the machines.

If the undervote was caused by malicious logic deliberately introduced into the source code, we did not find any evidence of such malicious logic in the source code examined by the team.

8.4 Hypotheses Summary

8.4.1 Machines dropped selections made in the CD13 race, creating an undervote.

Contraindications: (see Section 6.2.1.6)

- TEST CONFIRMATION
- FLORIDA UNIQUENESS. If the claimed behavior were present in the certified iVotronic software, one would expect that it would have been observed in other jurisdictions using the same software.
- FULL RECORDING

8.4.2 Votes were validly cast in the CD-13 race but were erroneously reported as undervotes.

Contraindications: (see Sections 6.2.2.1 and 6.2.3.1)

- TEST CONFIRMATION
- FLORIDA UNIQUENESS
- FULL RECORDING

8.4.3 No selection made in the CD13 race, but the review screen showed a vote, creating an undervote.

Contraindications: (see Section 6.2.1.6)

- TEST CONFIRMATION
- FLORIDA UNIQUENESS
- FULL RECORDING

8.4.4 Machine did not display the CD-13 race to some percentage of voters

Contraindications: (see Section 2.5.4 and 6.2.1.5).

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FLORIDA UNIQUENESS
- FULL RECORDING (especially PROPER DISPLAY)

8.4.5 The particular ballot style used in Sarasota County caused the machine to behave abnormally.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING

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8.4.6 Some dynamic error not easily visible in the source code, e.g. buffer overflow or data left from previous voters caused the anomalous undervote.

Contraindications: (see Section 7)

- TEST CONFIRMATION. The error did not occur in testing, but would have had to occur with great frequency during voting.
- CHARLOTTE and LEE UNDERVOTE. Why did the problem occur in Sarasota, Charlotte, and Lee Counties, but nowhere else?
- FLORIDA UNIQUENESS

8.4.7 The touch screens were miscalibrated to prevent voting in the District 13 race.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- A very large number of machines would have exhibited the problem, and could not have been recalibrated before post-election testing. Thus, the problem would have been observed in testing.
- The undervote would have been much higher.
- Other races on other screens would have been affected but were not.

8.4.8 The touchscreens were miscalibrated so that the hotspot and corresponding candidate box were misaligned.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- A large number of machines would have exhibited the problem and could not have been recalibrated before post-election testing. Thus, the problem would have been observed in testing.
- Other races on other screens would have been affected but were not.

8.4.9 The touchscreen smoothing filter caused the undervote.

A smoothing filter is a mathematical procedure for damping transient touch screen effects such as the voter altering the position of her finger or changing the pressure exerted by the finger on the screen. The allegation has been floated on Internet newsgroups that the iVotronic touch screen filter could have caused the undervote. No explanation has been offered how the effect would confine itself to a single race on a single screen. The touch screen filter does not act differently on different screens.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- Other races would have been affected but were not.

8.4.10 A “controlling contest” specification linked CD-13 to a vote in a different race, thus affecting the voter’s selection in CD-13.

Contraindications: (see Section 6.2.1.3)

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- TEST CONFIRMATION
- CVR CORRESPONDENCE
- NO SERIAL RACE EFFECT
- The Sarasota County ballot styles did not contain any controlling contests (Section 4.1.8).
- No voter complaints about controlling contest messages (Section 6.2.1.3).

8.4.11 A “straight party” specification linked CD-13 to a vote in a different race, thus affecting the voter’s selection in CD-13.

Contraindications: (see Section 6.2.1.4)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- NO SERIAL RACE EFFECT
- The Sarasota County ballot styles did not enable straight-party voting (Section 4.1.7).

8.4.12 A “special event,” such as a write-in or ADA voter, triggered an anomaly for this or subsequent voters resulting in the CD-13 undervote.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- Too few special events occurred to account for the undervote.
- Non-ADA machines also showed high undervote rates.

8.4.13 The actions of a voter in a race other than CD-13 affected the CD-13 race.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO SERIAL RACE EFFECT
- FLORIDA UNIQUENESS

8.4.14 Returning to a contest from the review page caused the CD-13 undervote.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO SERIAL RACE EFFECT
- FLORIDA UNIQUENESS
- Why would only CD-13 be affected?

8.4.15 A special language voter caused the CD-13 undervote.

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- Too few special language voters to account for the undervote.

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8.4.16 A mishandled interrupt changed the state of the machine and caused the CD-13 undervote.

Contraindications: (see Section 6.3)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- A mishandled interrupt bug would have had to have affected the majority of machines to cause the observed CD-13 undervote rate, which means it must have occurred with fairly high frequency on the election; but the fact that no problem was observed during testing means that it would could only have occurred with low frequency during testing.

8.4.17 There was an error writing from RAM to the terminal memories causing valid votes in CD-13 to be recorded as undervotes.

Contraindications: (see Section 6.2.2.1)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING (especially ACCURATE VOTE DATA)
- CHARLOTTE and LEE UNDERVOTE
- FLORIDA UNIQUENESS

8.4.18 Having multiple contests on the same ballot page caused changes depending on the order in which the contests were voted.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO SERIAL RACE EFFECT
- FLORIDA UNIQUENESS
- Why would only CD-13 be affected? In Sarasota County, there were other ballot pages containing multiple races, but there are no signs that those other races were similarly affected.

8.4.19 Variables holding information about voters were initialized to incorrect values or not initialized at all.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- Why would only CD-13 be affected? In Sarasota County, there were other ballot pages containing multiple races, but there are no signs that those other races were similarly affected.

8.4.20 An extra ballot style without CD13 was present on the supervisor terminal and large numbers of voters received a defective ballot.

Contraindications:

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- TEST CONFIRMATION
- CVR CORRESPONDENCE. The CVRs show that the race was present on all ballots displayed to the voters.
- FULL RECORDING
- Large numbers of voters would have reported this problem

8.4.21 The machine software made an error in determining where to write a ballot image, thereby overwriting parts of images previously written and deleting votes in CD-13.

Contraindications: (see Section 6.2.2.1)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING (especially ACCURATE VOTE DATA)
- FLORIDA UNIQUENESS
- We studied the source code that is responsible for recording ballot images. That code was simple, clean, and well-structured. The amount of code in this category was limited enough that we were able to exhaustively review all of it. We are confident this code has no error that would cause previously recorded ballot images to be overwritten. See Section 6.2.2.1 for further analysis.

8.4.22 The actions of one voter affected the ability of the next or a subsequent voter to have a CD-13 vote recorded.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO SERIAL RACE EFFECT
- NO SERIAL VOTER EFFECT
- FLORIDA UNIQUENESS

8.4.23 Time-sensitive code was present on the machines to affect CD-13, but only during actual voting and was untestable before and after the elections (see Section 7).

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO TIME-SENSITIVE CODE
- FLORIDA UNIQUENESS

8.4.24 An error caused electronic vote totals generated from ballot images to be written incorrectly to the closing PEB.

Contraindications: (see Section 6.2.3.1)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS

8.4.25 Insertion of an invalid PEB (either vote or supervisor PEB) into the machine caused CD-13

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to be affected.

Contraindications: (see Section 6.2.1.2)

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- FLORIDA UNIQUENESS
- NO VOTE PEB EFFECT
- NO SUPER PEB EFFECT

8.4.26 The networking of multiple DREs together in the same polling caused CD-13 to be affected.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO NETWORK EFFECT
- FLORIDA UNIQUENESS

8.4.27 The use of the same PEB or set of PEBs among machines in the same polling place caused CD-13 to be affected.

Contraindications:

- TEST CONFIRMATION
- CVR CORRESPONDENCE
- FULL RECORDING
- NO NETWORK EFFECT
- NO PEB CLUSTER EFFECT
- FLORIDA UNIQUENESS

8.4.28 The machines were tampered with after the election to erase the CD-13 votes on a high percentage of ballots.

Contraindications:

- CVR CORRESPONDENCE. The machine memories after the election (and presently) agree with the tallies produced and printed out at the precincts on election night. Therefore, the intrusion would have to have been made county-wide during the election and there is no evidence of such a widespread attack.

8.4.29 Firmware in the machines was tampered with to drop votes from the District 13 race and then erase itself before or at the close of polls, so no subsequent testing would reveal the intrusion.

Contraindications:

- CHARLOTTE and LEE UNDERVOTE. Any such attack should have been duplicated in Charlotte and Lee Counties, too.

8.4.30 Malware not present or visible in the source code was inserted into the machines in advance of the election to cause the CD-13 undervote.

Contraindications:

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- TEST CONFIRMATION. Any such malware would have had to have erased itself before the testing.
- CHARLOTTE and LEE UNDERVOTE. Any such attack would have had to have been duplicated in Charlotte and Lee Counties, too.

9 Conclusions

There is no topic that compares to electronic voting with regard to diversity of security demands, inherent complexity, and the intensity of emotions it elicits in society today. Voting systems demand the highest integrity standards. Everyone wants them to be perfect, but every method of software verification and validation has limitations that leave the possibility of undetected faults. Software code review has been proven to be one of the most effective methods of recognizing and identifying faults, but no software review can claim to provide absolute assurance that software is entirely fault free.

This report presents the background, organization, process, findings, and opinions of our firmware code review. We conclude with the following summarizing statements.

- 9.1 We are confident that no iVotronic firmware bug contributed to the CD13 undervote.
- 9.2 Independent audits benefit from cooperation from vendors, election officials, and developers.
- 9.3 Our analysis suggests several important points regarding electronic voting software.
 - 9.3.1 Electronic voting code review demands technical specialists and is resource intensive.
 - 9.3.2 Strong standards and standards enforcement are essential to effective audit.
 - 9.3.3 Statistical analysis can contribute to election auditing, but it cannot replace code review. Statistical analysis and code reviews, used in combination, can be more effective than either method on its own.
- 9.4 Electronic voting software needs to be secure. While properly implemented procedures can mitigate many threats, neither election procedures, code reviews, paper trails, rigorous testing, advocacy group oversight, nor any other mitigating factor can systematically ensure voting system integrity where faulty electronic voting system software is employed. Secure software, written to exacting and enforced standards, and carefully constructed election system procedures are necessary to provide electronic voting system integrity.

10 Acknowledgments

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As part of our work we used Fortify Source Code Analysis (SCA), made by Fortify Software, in order to assist with the code review process. Fortify Software donated the tool to us free of charge for use on this project and we thank them for their contribution. We note that two members of the team (Bishop and Wagner) are on Fortify Software's Technical Advisory Board.

11 Team Endorsement



Ted Baker



Matt Bishop



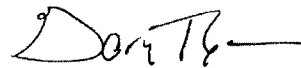
Michael Burmester
Co-Principal Investigator



Breno de Medeiros
Co-Principal Investigator



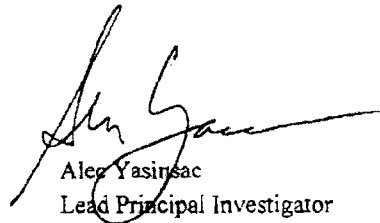
Michael Shamos



Gary Tyson



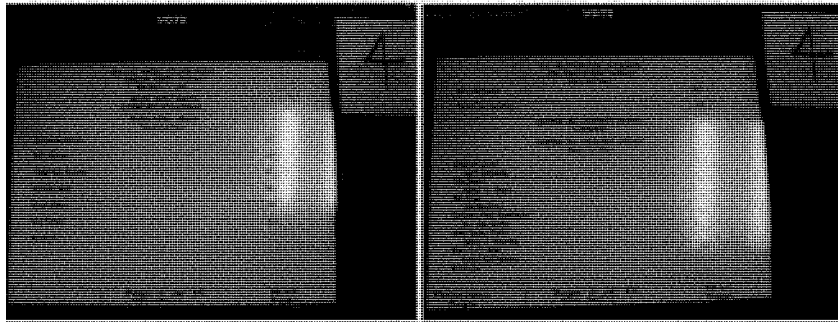
David Wagner



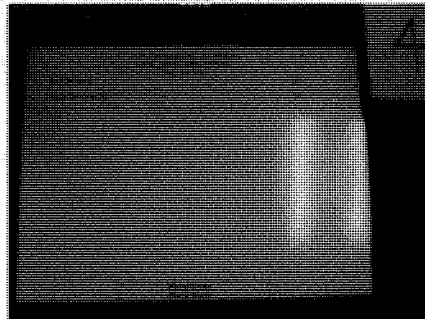
Alex Yasinac
Lead Principal Investigator

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Appendix A CD13 Screenshots

1st Ballot Page, US Senate Race Only 2nd Page: US Congress CD13 & Florida Governor



CD13 Re-vote Page

Appendix B Technical Analysis of the PEB Virus Threat

I Creating an Attack Scenario

We are not aware of any plausible scenario under which an outsider could introduce a virus in the days before a general election and cause it to spread rapidly enough to infect many or most of the machines before the end of election day. Consequently, an attacker without special inside access would have to introduce the virus months in advance if they wanted to influence some particular race.

1.1 Introducing the Virus

An attacker might be able to inject the virus into a single machine by breaking into a polling place where the machines are stored unattended before election day. Or, the attacker could volunteer as a poll worker and inject the virus during a quiet lull on election day. Injecting the virus into a single machine could take only seconds, if the attacker is highly sophisticated and prepared in advance, and would not necessarily require any kind of suspicious-looking activity.

The virus spread rate depends upon many variables, on how the virus is programmed, the details of the operational processes used by county election workers, how the machines are used, and other details that one would not expect to have any effect on system security. We cannot confidently estimate how rapidly or slowly such a virus would spread without additional detail about Sarasota election management procedures. The full range of possibilities is analyzed later. The virus might propagate from election to election, taking half a dozen or so elections before the majority of machines are infected. In this scenario, a virus introduced at one point by an outsider might not have the capacity to cause large-scale influence until years after it was introduced.

Alternatively, a virus introduced by an outsider in one election might spread to all of the machines before the next election. For instance, in this scenario, a virus introduced by an outsider during the primary election might propagate rapidly enough to infect all of the machines used in the subsequent general election.

We call an iVotronic machine infected if the virus is resident in that machine's firmware. A PEB contains non-volatile storage, which is used to store the election definition file and other data. An infected machine can overwrite the election definition file with maliciously chosen data. If that happens, we say that the PEB has been infected. Due to a flaw in the iVotronic code, when the iVotronic reads the election definition file from a corrupted PEB, the iVotronic machine may become infected. If so, the virus could take up residence in the iVotronic firmware, replace the running code of the machine, and remain resident there.

The specific vulnerability is that the iVotronic software copies a variable-length nul-terminated (C-style) string from the ballot definition file into a fixed-size stack-allocated buffer. If the string in the ballot definition is too long, this will overflow the bounds of the fixed-size buffer and overwrite other parts of memory. An attacker could use well-known techniques to exploit this bug, inject malicious code into the address space of the iVotronic machine, and cause the processor to begin executing that malicious code. At this point, the attacker has complete control over the iVotronic: the iVotronic is infected.

We found numerous instances of this type of bug. Misplaced trust in the election definition file can be found throughout the iVotronic software. We found a number of buffer overruns of this type. The software also contains array out-of-bounds errors, integer overflow vulnerabilities, and other security holes. They all arise due to the fundamental architectural flaw of misplaced trust.

A security expert might call this a failure of input validation. Standard advice in computer security is to “validate” all inputs, i.e., to check that their values fall within expected ranges and satisfy the relationships one expects, without making any assumptions that these conditions will necessarily hold until they have been explicitly checked. The architectural flaw is that the needed input validation is missing from the iVotronic software.

Finding and exploiting this vulnerability would require technical sophistication and dedication. We found these vulnerabilities by inspecting the source code. With more effort, an attacker may find these vulnerabilities without access to source code. The biggest barrier is that a would-be attacker would need access to an iVotronic machine for experimentation. Given this, a technically competent attacker may be able to, with sufficient time and motivation, discover these vulnerabilities. An attacker with the patience to reverse-engineer and disassemble the firmware would probably discover these flaws, but simpler methods would probably also suffice to reveal the vulnerability. For instance, applying a fuzzing tool to an existing election definition file would likely reveal the existence of stack-based buffer overruns, and at that point standard exploit methods might suffice.

1.2 Developing the Virus

Once the details of the vulnerability are known to the attacker, developing an attack seems likely to be straightforward if tedious. Ultimately, our best guess is that discovering this attack would be a matter of technical competence, tedium, and hard work, and it would require considerable motivation, but it would not require genius-level skills. A highly motivated and skilled lone individual could probably do everything needed to exploit the vulnerability. Consequently, the threat cannot be ignored.

Once the attacker has control of a machine, they would still need to develop a virus that automatically spreads from machine to machine. This virus could work by writing the exploit code onto every PEB that is inserted into an infected machine. Developing a working virus would require further work, but is likely within reach of a technically skilled programmer.

2 A Hypothetical Scenario: A Day in the Life of a Virus

To pull the pieces together, we illustrate one example scenario of how a virus might work by identifying what might happen in a step-by-step fashion:

1. The attacker obtains a voting machine for testing and a PEB. Of course these are controlled items and possessing them places the attacker at risk of discovery and prosecution. Stealing these items would be risky and illegal. Nonetheless, if the attacker can obtain these items, she could use these to develop malicious data and malicious code that, if placed on a PEB, can exploit the vulnerabilities and replace the running code of machines that use the PEB.
2. The attacker volunteers to serve as a poll worker. In many jurisdictions, the need for poll workers is so great that it is easy to become a poll worker simply by volunteering far enough in advance. In the worst case, the attacker might be installed as the chief poll worker in a polling place.
3. The attacker prepares an infected PEB. For instance, if PEBs are provided to chief poll workers before election day, then the attacker might take the master PEB and “infect” it by writing the malicious data and code that he prepared earlier onto the PEB. At this point, the PEB is “infected.” In a worst case scenario, if the attacker is able to use this PEB to open the iVotronic machines, then all of the machines in that polling place are infected. The attacker’s job is now done; the virus will spread without any further help from her.

4. At this point, the virus has been introduced into circulation within this one polling place. If only one machine is infected, it can infect any PEB that is inserted into it by writing the same malicious data and code onto that PEB.
5. By the end of the day, many of the PEBs in that polling place may have become infected. Also, at least one machine in that polling place is infected, and possibly all of them.
6. At the end of the election, the machines and PEBs are returned to election headquarters and are later returned to storage.
7. During normal procedures before the next election, the PEBs are cleared, which erases the viral content on them and returns them to an uninfected state. The terminals are also cleared, but a sophisticated attacker can write the virus to prevent the clear operation from removing or detecting the virus.
8. The machines are reassigned to polling places and distributed before the next election. Some of those machines may still be infected, so some polling places in the new election will receive infected machines.
9. When opening the polls, if one of the machines in the polling place is infected, it can infect the PEB used to open it and all other machines subsequently opened with that PEB will become infected. For each polling place that started out with one infected machine, we can expect the virus to infect about half of the machines by the end of the day, on average.
10. At the end of the day, we now have a larger population of infected machines. These machines are returned to the elections warehouse and then reused in another election. Because the number of infected machines only increases and never decreases, the infected population will grow over time. Under worst case conditions, we can expect exponential growth in the number of infected machines.
11. After some number of elections, most of the machines in the population are infected.
12. Up until now, the virus might have done nothing other than spread. At some point, the virus's payload might be activated (e.g., if it is triggered to activate after a certain date). At that point, all infected machines are controlled by the attacker, and will behave as directed by the attacker program. For example, the virus may flip votes for a selected party in selected contests or may change votes into undervotes. At some pre-determined date, or after it has accomplished its goal, if its creator has programmed it to do so, the virus might self-destruct, erase all indications of its presence, and return all iVotronic machines and PEBs to their factory state.

This is one example scenario. Many variations are possible, each with their own strengths and weaknesses. There are many ways to introduce the virus initially. Also, as we shall see below, there are other ways that viruses might spread.

2.1 Hypothetical Propagation Speed

One obvious question about such a scenario is: How fast can such a virus spread?

2.1.1 Bottom-up Propagation Speed and Limits

Since propagation is only accomplished via shared media, media sharing restrictions can control propagation from the bottom up (i.e. PEB to terminal to PEB). As we noted earlier viruses are highly unlikely to spread across county lines because counties generally do not share media and equipment. If no media are routinely shared, the virus could only propagate via policy violation, human error, or illegal activity. Moreover, voting is a safe operation, so inserting a PEB into a terminal to initiate a voting session cannot infect the terminal.

Thus, the media sharing policies within counties control the propagation potential. We constructed a simulation to evaluate the propagation speed in a hypothetical environment where machines and PEBs are randomly distributed. This simulation suggested that the number of infected machines grows exponentially with the number of elections and, under these assumptions, the virus would spread to infect most machines within about five elections. However, as discussed in Section 7.5.3, these randomness assumptions do not reflect the practices in place in Sarasota County, so we reference this result only as a baseline, pessimistic scenario. Even in this case, comprehensive propagation would take three election cycles on average so an attacker who wanted to infect most of the iVotronic machines by injecting a virus into a single machine would need to prepare the virus and introduce it into circulation several election cycles in advance.

This also shows how implementing a process that consistently places terminals and PEBs in the same precinct in every election can prevent virus propagation. Again, this leverages the decentralized nature of election management to enhance security protections.

2.1.2 Supervisor Terminal

If a Supervisor terminal were infected, the process of preparing PEBs for the next election could cause every prepared PEB to become infected. The subsequent poll-opening process at each polling place with these infected PEBs would cause all of the voting terminals to become infected. This means that the Supervisor terminal is a single, central point of vulnerability.

There are three primary threats to the supervisor terminal. The first is an insider attack, which is straightforward. The second is compromise via illegal activity, essentially where an intruder breaks into the office holding the Supervisor terminal.

The third threat relates to how PEBs are handled after they are returned from the polling place. If an attacker can infect one or more PEBs after the election and return them to circulation, they may be able to infect the Supervisor terminal during preparations for the next election.

The detailed process used to handle such PEBs in Sarasota County would have a major impact on how quickly a virus would spread. For instance, if Sarasota County workers ordinarily insert every PEB into the Supervisor terminal and invoke the Clear Supervisor PEB Vote Totals operation (from the Election Central Applications menu) after the election is over, then the risk of a virus is pronounced: an attacker would just have to introduce a single infected PEB to infect the Supervisor terminal. As another example, if Sarasota County workers ordinarily perform the Qualify PEB(s) operation (from the Supervisor terminal's Service menu) on every PEB before performing any other operation on that PEB, then the risk would be significantly reduced, since this operation clears the contents of the PEB before it has a chance to infect the Supervisor terminal.

3 Ineffective Defenses Against the Virus Threat

We examined many security features of the system to see if they would be able to ward off viruses. Our analysis is as follows:

Proprietary file formats are not an effective defense against viruses. The election definition file, as stored on the PEB, is in proprietary format. This format includes several version fields, magic constants, and other values that must be correct, or else the iVotronic machine will reject the election definition file as invalid. However, this will not prevent the spread of a virus. First, it would not be difficult for a sophisticated attacker with access to an iVotronic machine to reverse-engineer these constraints. Second, these constants and version fields are the same for every iVotronic machine across the country, so they cannot be treated as cryptographically secure secrets. Third, the part of the file where the virus would be inserted does not contain any of these magic constants or

version fields. Therefore, all an attacker would need to do is to take an existing election definition file and overwrite only the portion needed to hold the virus.

- Checksums cannot prevent viruses. The iVotronic election definition file format contains an unkeyed 8-bit checksum (the sum of the bytes modulo 256). This checksum is a reasonable way to detect random errors (e.g., hardware bit flips), but it is not an effective defense against malicious activity. This kind of unkeyed checksum does not prevent malicious tampering with the contents of the election definition file while in transit, because an attacker can arrange for his change to leave the checksum field valid, or can modify the election definition file and then overwrite the checksum with a correct checksum value. The PEB also uses a CRC16 checksum to check for random errors in stored data, but this will not detect or deter malicious attacks for the same reason.
- The Election Qualification Code (EQC) does not prevent viruses. The EQC is a 32-bit election-specific secret code that must be present on a PEB; otherwise, the PEB will be rejected by the iVotronic machine. (See Appendix D for more details.) Unfortunately, this does not prevent the spread of viruses. The EQC is the same for all iVotronic machines and all PEBs in a county, for any one election. As long as the virus takes care to leave the EQC field in the PEB undisturbed, the EQC will not limit virus propagation. Also, the EQC will not prevent virus introduction. The EQC is stored in the clear, not cryptographically protected on a PEB, so a malicious poll worker who gains unsupervised access to a PEB before the end of an election could overwrite the data on the PEB, leaving the EQC undisturbed, and re-introduce it into circulation before the end of the election.

We conclude that though these mechanisms may deter or complicate an attack, they would not pose an effective defense against viruses. This is not surprising, as security is not their designed purpose. It does not indicate a flaw in those mechanisms; it is well known that mechanisms intended to improve reliability and detect random errors generally are not sufficient to prevent malicious attack. We emphasize that we do not allege that the checksums or file formats or EQC mechanisms are flawed in any way, merely that they do not serve as an effective barrier to viruses.

Appendix C Safe and Unsafe Operations

We note that the mere act of inserting an infected PEB into an iVotronic will not infect the machine. Infection can spread only if one invokes vulnerable operations while a PEB is inserted. We analyzed nearly all available operations and reflect the results in the tables below. If performing an operation while an infected PEB is inserted can cause an iVotronic machine infection, then we call that operation *unsafe*. If performing that operation cannot infect the iVotronic even in the presence of an infected PEB, we call that operation *safe*. In some cases we were not able to identify from the code whether the operation is safe or not; in that case, we labeled it as *unknown*. We assume that the iVotronic machine is initially uninfected and ask only whether invoking that operation can cause the iVotronic to become newly infected.

We note that the results for Voter terminals (ordinary iVotronic machines, typically used for voting) differ for Supervisor terminals. Also, in some cases the results vary according to the machine mode. We also distinguish between operations that are ordinarily performed by poll workers under normal operation (e.g., opening or closing the polls), operations that can only be invoked via the Service menu (which is only accessible using a special password), and operations that can only be invoked via the Elections Central Administration menu (which requires yet another special password). The latter two menus are normally only used by county election workers or technicians; they are not normally accessible to poll workers or voters. Our analysis for the latter two categories are presented in separate tables.

Lastly, in some cases the results depend upon whether a Supervisor or Voter PEB is inserted into the machine. Because Sarasota County uses Pollworker-activated Mode, which only uses Supervisor PEBs, we did not analyze any of the code that was associated with Voter PEBs.

The “Qualify PEB(s)” operation (accessible via the Service menu) deserves special comment. This operation clears PEB contents and erases any data previously stored on it. Therefore, not only is this operation safe to perform on an infected PEB, it also cleans infected PEBs.

There is a subtlety associated with “Qualify PEB(s).” Suppose that we have a PEB whose firmware (software that operates infrared communications) has been replaced by the attacker. The “Qualify PEB(s)” operation sends commands to the PEB instructing the PEB to erase all of its data and leaves it up to the PEB to do so. If the PEB’s firmware has been replaced by malicious code, then the PEB might ignore these instructions to erase itself. In short, if the attacker has had the chance to physically tamper with the PEB, then we cannot rely upon “Qualify PEB(s)” to erase and disinfect the PEB. On the other hand, for PEBs that have not been under the physical control of the attacker and that contain only malicious data—not malicious firmware—“Qualify PEB(s)” will indeed erase all malicious data present. We did not analyze whether there was any way for a malicious iVotronic machine to attack or corrupt the firmware or code on the PEB, as this was outside the scope of our analysis.

We note that while these virus vulnerabilities are dangerous, the number of unsafe operations is a bit misleading relative to the actual threat that they pose. Many of these operations are rarely performed so are unlikely to infect a large number of PEBs. Moreover, while there are many unsafe operations, each may require a distinct exploit and it may not be possible to exploit more than one operation with a single PEB. It may also be true that preparing a PEB for exploit may corrupt it for normal operation, thus exposing it to detection or surreptitious removal from service.

1 Ordinary operation, Voter terminal, Supervisor PEB

This describes the ordinary functions of a Voter terminal when used in Poll worker-activated mode.
 . (Voter-activated mode was not analyzed.)

Operation (mode)	Safe/unsafe to perform with an untrusted PEB inserted.
Opening the polls (BLANK)	<i>unsafe</i>
Voting (OPEN)	<i>safe</i>
Closing the polls	<i>unknown</i>
Printing reports, modem vote results on a-closed terminal (CLOSED, EMERGENCYCLOSED)	<i>unsafe</i>
everything else	<i>unknown</i> (not analyzed)

2 Ordinary operation, Supervisor terminal, Supervisor PEB

This describes the ordinary functions of a Supervisor terminal when used with Supervisor PEBs.
 (Operation with Voter PEBs, i.e., Voter-activated mode, was not analyzed.)

Operation (mode)	Safe/unsafe to perform with an untrusted PEB inserted.
Prepare Voter PEB	not analyzed (only used for Voter-activated mode)
Opening the terminal for voting (BLANK, LOADED)	<i>unsafe</i>
Closing the terminal (OPEN)	<i>unsafe</i> if performed before the designated time for closing the polls
Printing a late zero tape (OPEN)	<i>unsafe</i>
Printing reports, modem vote results on a-closed terminal (CLOSED, EMERGENCYCLOSED)	<i>unsafe</i>
Unlocking a locked terminal (LOCKED)	<i>safe</i>
everything else	not analyzed

3 Service menu

The following comments apply to both Voter and Supervisor terminals, except where noted.

Operation	Safe/unsafe to perform on an untrusted PEB?
Clear And Test Terminal	safe
Set Time and Date	safe
Qualify PEB(s)	safe
Upload PEB to Compact Flash	<i>unknown</i>
Upload 3 Flash Memories to Compact Flash	safe
Test Printer	safe
Test Modem	<i>unsafe</i> in every mode
Upload Firmware	safe
Load System Files (Text Ballots)	safe
Enable Audio ballot on Unit	safe
Set Volume	safe
Force Coded Ballot Entry	safe
VOTE Button Configuration	safe
Enable Receipt Printing	safe
Select Progress Bar	safe
Logic And Accuracy Test	<i>unsafe</i> , if L&A testing is enabled (i.e., mode isn't OPEN or CLOSING and public count is zero), depending upon which option the user subsequently selects; see Logic and Accuracy Test menu below for details and full analysis
Enable Zoom Selection Screen	safe

3.1 Elections Central Applications menu, for Voter terminals

Operation	Safe/unsafe to perform on an untrusted PEB?
Upload Terminal Audit Data Serial	<i>Unknown</i>
Upload Terminal Audit Data to CompactFlash	<i>Unknown</i>
Print Report to Screen	<i>unsafe</i> if polls have not yet been opened (i.e., BLANK or OPENING mode); safe otherwise
Print Report To The Printer	<i>unsafe</i> if polls have not yet been opened (i.e., BLANK or OPENING mode); safe otherwise
Print Event Log	not analyzed
Print Vote Summary With Write-Ins	safe
Print Vote Summary Minus Write-Ins	safe

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3.2 Logic and Accuracy Tests menu

This menu provides several options for L&A testing. The following comments apply to both Voter and Supervisor terminals, except where noted otherwise.

Operation	Safe/unsafe to perform on an untrusted PEB?
Vote For One Test	<i>unsafe</i> in every mode
Multi Vote Test	<i>unsafe</i> in every mode
Vote Selected Ballot Test	<i>unsafe</i> in every mode
Print L And A Vote Totals to Screen	<i>unsafe</i> if polls have not yet been opened (i.e., BLANK or OPENING mode), for Voter terminals; <i>unsafe</i> in every mode, for Supervisor terminals; otherwise, <i>unknown</i>
Print L And A Vote Totals to Printer	<i>unsafe</i> if polls have not yet been opened (i.e., BLANK or OPENING mode), for Voter terminals; <i>unsafe</i> in every mode, for Supervisor terminals; otherwise, <i>unknown</i>
Transfer Results To PEB	<i>unsafe</i> if polls have not yet been opened (i.e., BLANK or OPENING mode), for Voter terminals; <i>unsafe</i> in every mode, for Supervisor terminals; otherwise, <i>unknown</i>
Clear And Test Terminal	safe

3.3 Elections Central Applications menu, for Supervisor terminals

Operation	Safe on an untrusted PEB?
Prepare PEB for Polling Location	Safe
Test Vote	Safe
Clear Supervisor PEB Vote Totals	<i>unsafe</i>
Prepare PEB for Serial Audit	Safe
Prepare PEB for CompactFlash Audit	Safe
Prepare PEB for Clear And Test	safe
Upload PEB Vote Results	<i>unsafe</i>
Print Report To Screen	<i>unsafe</i>
Print Report To The Printer	<i>unsafe</i>
Start Election Qualification Trail	safe
Color Option Numbers	safe
Print Event Log	safe
Print Vote Summary With Write-Ins	<i>unsafe</i>
Print Vote Summary Minus Write-Ins	<i>unsafe</i>

Appendix D Passwords

We analyzed the access control mechanisms in the iVotronic software to determine whether they ensure that only authorized users are able to invoke sensitive functions on the machines. The iVotronic uses password protection to control access to sensitive functions. Therefore, we analyzed all uses of passwords in the iVotronic.

We found several passwords, used for different purposes:

- The Service Menu password is used to control access to the Service Menu, which provides functions that would ordinarily only be needed in the county warehouse. The Service Menu is not normally used by poll workers.
- The ECA password controls access to the Elections Central Administration menu. This menu provides additional functionality over and beyond the Service menu. The ECA menu is only accessible from the Service menu; therefore, reaching the ECA menu requires knowledge of both the Service password and the ECA password.
- The Clear and Test password is used to control access to the clear and test operation. The clear and test operation erases all votes stored on the iVotronic machine and prepares it for use in the next election. Because this operation can irreversibly delete votes, this is a sensitive function that must be protected from unauthorized individuals.
- The Election Qualification password is used to prepare a machine for a new election.
- The Upload Firmware password is used to control the ability to upgrade the executable software resident on the iVotronic's internal flash memory. This is an extremely sensitive operation, because it allows replacing the iVotronic's software. If this were invoked by a malicious individual, they could use it to install malicious software on the iVotronic machine or to infect it with a virus. This operation is available as a menu option in the Service menu. Therefore, invoking this operation requires knowledge of both the Service password and the Upload Firmware password.
- The Override password is used to control certain exceptional conditions that should not normally arise. For instance, if the user tries to close the polls on an iVotronic machine before the official time when the election is due to end, the machine requires the user to enter an override password before proceeding.
- The modem password is used by the iVotronic machine to transmit results back to the Unity Data Acquisition Manager (DAM) system at the county headquarters. When the iVotronic machine connects to the Unity server over the telephone, it first sends the modem password over the phone. While we do not have access to the Unity server source code to check how the Unity server uses this password, it would be logical to presume that the Unity server checks that the proper password has been sent before allowing the connection to continue. The modem password does not need to be known by any human.

Typically, the override password would be the only password divulged to poll workers; the other passwords would not be revealed to poll workers, and would be told only to county election workers.

Next, we analyze password security strength to determine if they can be guessed by an ill-intentioned individual. The modem password can be set at the Unity server when the election is configured. It is included in the election definition file. It is listed in the clear in the election definition file found on every PEB and, eventually, on every iVotronic machine. It is the same for

all iVotronic machines within a county. If it is not set, there is a default value hard-coded into the source code; this default is the same for all iVotronic machines across the nation. It is up to election officials to choose this password in a way that ensures it is unguessable, to change this password frequently (e.g., after every election), and to control who knows the password. Those are operational questions that are beyond the scope of a source code review.

Like the modem password, the override password can also be set at the Unity server when the election is configured. It too is included in the clear in the election definition file found on every PEB, and it is the same for all iVotronic machines within a county. It is selected and managed by election officials, so the management of this password is beyond the scope of a source code review.

Each of the other passwords mentioned above is fixed and hard-coded into the source code. They are the same for all iVotronic machines in the country, and likely to be known to every election official who manages elections on an iVotronic machine. They can never be changed, without changing the firmware on the iVotronic machine. This represents poor practice.

The Service Menu password, Clear and Test password, ECA password, and Upload Firmware password are three-letter case-insensitive passwords. Each one is chosen to be mnemonic and easy to remember. The problem is they are also likely to be fairly easy to guess. They follow a memorable pattern. Someone who knows one of these passwords can probably guess what the other ones are without too much difficulty. These passwords provide very little security.

The Election Qualification password is a five-letter case-insensitive password that is chosen to be easily memorable. It does not follow the same pattern as the other passwords.

The weakness of the Upload Firmware and Service passwords are of primary concern, because someone who knows those two passwords can replace the software on the iVotronic with malicious software that switches votes from one candidate to another, that turns valid votes into undervotes or deletes them entirely, that infects the machine with a virus, or that otherwise compromises the integrity of the election. These functions should be better protected.

Our judgment is that the password mechanisms on the iVotronic are poorly conceived and poorly implemented. The consequence is that the passwords by themselves do not do a good job of preventing unauthorized individuals from accessing critical system functions.

Finally, these passwords can all be bypassed using a special type of PEB, called a Factory Test PEB. When a PEB is inserted, the iVotronic machine queries the PEB to ask it what kind of PEB it is, and the PEB returns a single byte indicating what type of PEB it is. A Factory Test PEB identifies itself by returning a special single-byte value. This special value is hard-coded into the iVotronic code. Anyone who knows the special single-byte value, has access to a PEB and is able to program the PEB could construct a PEB that identifies itself as a Factory Test PEB. When a Factory Test PEB is present, all password checks are bypassed: in places where the user would normally need to enter a password, the password check is bypassed, the machine functions as though the correct password had been entered, and a log entry is appended to the event log as though the user entered the correct password. This undocumented backdoor poses a risk of unauthorized access to critical system functions, because it provides a way that a malicious individual could bypass the password checks by tampering with a PEB.

The New York Times

February 24, 2007

Panel Cites Voter Error, Not Software, in Loss of Votes

By CHRISTOPHER DREW

Florida election officials announced yesterday that an examination of voting software did not find any malfunctions that could have caused up to 18,000 votes to be lost in a disputed Congressional race in Sarasota County, and they suggested that voter confusion over a poor ballot design was mainly to blame.

The finding, reached unanimously by a team of computer experts from several universities, could finally settle last fall's closest federal election. The Republican candidate, Vern Buchanan, was declared the winner by 369 votes, but the Democrat, Christine Jennings, formally contested the results, claiming that the touch-screen voting machines must have malfunctioned.

Legal precedents make it difficult to win a lawsuit over ballot design, but a substantial error in the software might have been grounds for a new election.

The questions about the electronic machines arose because many voters complained that they had had trouble getting their votes to register for Ms. Jennings, and the machines did not have a back-up paper trail that might have provided clues about any problems. The report said some voters might have accidentally touched the screen twice, thus negating their votes, while most of the others probably overlooked the race on the flawed ballot.

Still, the difficulty in resolving these complaints has helped fuel a drive in Congress to ban the paperless machines. Voting experts said the audit of the software code also was the first time any state had gone to such lengths to resolve a close election.

While some voters in Sarasota bristled yesterday at the idea that they had done anything wrong in casting their votes, or that nearly 13 percent of all voters could have failed to spot the race on the ballot, members of the investigative team said that those remained the only plausible theories.

The report acknowledged that the huge undertone — in which voters cast a ballot in other races but not for the Congressional seat — was both “abnormal and unexpected.” But it said that all eight members of the investigative team, including some experts who have long been skeptical about the paperless machines, agreed that the basic programming “did not cause or contribute to” the loss of votes.

The study suggested instead that the confusion over the ballot design,

CONGRESSIONAL ELECTION
UNITED STATES SENATE
(Vote for One)

Christine Jennings	YES	<input type="checkbox"/>
Vern Buchanan	NO	<input type="checkbox"/>
Blank line	YES	<input type="checkbox"/>
Blank line	NO	<input type="checkbox"/>
Blank line	YES	<input type="checkbox"/>
Blank line	NO	<input type="checkbox"/>
Blank line	YES	<input type="checkbox"/>
Blank line	NO	<input type="checkbox"/>

Page 1 of 2
Ballot screen 1

U.S. REPRESENTATIVE IN CONGRESS
12th CONGRESSIONAL DISTRICT
(Vote for One)

Christine Jennings	YES	<input type="checkbox"/>
Vern Buchanan	NO	<input type="checkbox"/>
Blank line	YES	<input type="checkbox"/>
Blank line	NO	<input type="checkbox"/>
Blank line	YES	<input type="checkbox"/>
Blank line	NO	<input type="checkbox"/>
Blank line	YES	<input type="checkbox"/>
Blank line	NO	<input type="checkbox"/>

Page 2 of 2
Ballot screen 2

A panel in Sarasota, Fla., said voter confusion over poorly designed ballots probably contributed to the loss of 18,000 votes in an election last fall. Above are the first two screens of the ballot, including the colors.

which had also drawn complaints from voters, probably accounted for the bulk of the problem, much as the infamous “butterfly ballot” distorted the vote in Palm Beach County, Fla., during the 2000 presidential election. In the Sarasota race, the names of Mr. Buchanan and Ms. Jennings were sandwiched between larger lists of candidates for the United States Senate and for governor. The House race was also squeezed in at

the top of a ballot screen, and it lacked the kind of colorful headings that highlighted the other races.

In three other Florida counties, the race for state attorney general was in a similar spot on the ballots, and those also had unusually high under-vote rates, the report noted.

Ms. Jennings said in an interview yesterday that further investigation should still be done, and her spokesman suggested that state officials

were not interested in learning the truth. Hayden Dampney, a lawyer for Mr. Buchanan, who was seated in the House last month pending the outcome of the challenge, said his client believed that the state had now “looked at every aspect of the election and found nothing wrong.”

Clare Ward-Jenkins, a Sarasota resident who had trouble registering her vote, said she felt insulted by the report’s implication that “we’re too stupid to know how to vote.”

Ms. Ward-Jenkins and more than 100 other voters contacted The Sarasota Herald-Tribune shortly after the election to complain that even though an “X” appeared on the touchscreen when they pressed the box for Ms. Jennings, their votes had disappeared by the time they got to a final screen for reviewing their choices. Ms. Ward-Jenkins and most of the others said they had to go through the process at least one more time to make their votes stick, raising concerns in the Jennings camp that other voters might have failed to notice similar problems that voided their ballots.

The report also left open the possibility that aging hardware could have caused isolated problems. But the investigative team leader, Alec Yasinec, a computer science professor at Florida State University, and David Wagner, a professor at the University of California, Berkeley, both said in interviews that if there had been any widespread problems, they would have affected other races as well.

“I’m persuaded that this wasn’t caused by machine failure,” Professor Wagner said.

But other voting experts said that because the machines used in the election have been sequestered by a court, only a portion of them have been examined closely.

The software experts said they also found several security vulnerabilities in the programming for the voting machines, made by Election Systems and Software in Omaha. But the report said there was no evidence that any of them had affected the Sarasota race.

Like many jurisdictions around the country, Sarasota County bought its machines in the rush to shift away from the old punch-card technology after the problems with hanging chads in the 2000 presidential race.

But Gov. Charlie Crist has announced plans to abandon the touchscreen voting machines and switch to a system that involves casting paper ballots counted by scanning machines.



Friday, February 23, 2007

MEDIA ALERT

CONTACT: David Kochman, 954-703-0245

State Audit of Sarasota Voting System Flawed, Incomplete

Tallahassee, FL – The audit of Sarasota County’s voting system was flawed, incomplete, and provides even more compelling reasons for the Christine Jennings campaign to seek a thorough investigation by outside experts.

The audit contained several critical flaws:

- **The investigation was incomplete:** Experts were not allowed access to the machines, causing Princeton professor Ed Felton to call the audit “far from the complete, independent study I had initially thought they wanted,” and forcing the team to rely on the flawed parallel testing conducted by the Secretary of State’s office. On page 19 of the final report from FSU’s SAIT lab, the researchers acknowledge “*We did not conduct a comprehensive election audit...The team’s task was not to examine the iVotronic systems or the PEBs used in the election, or to perform forensic analysis on those systems to determine whether a problem in them caused the undervote.*”

- **The audit ignored the analysis of MIT’s Dr. Charles Stewart**, who found a strong statistical correlation between the date of machine set-up, number of machines prepared that day, and increased undervote rates.

- **The report added even more credibility to the belief that the undervote changed the outcome of the race**, a fact supported even by ES&S’ expert Dr. Michael Herron. The report acknowledged, “There is no dispute that this undervote is abnormal and unexpected and that it cannot be explained solely by intentional undervoting (p.7).”

“A doctor can’t diagnose a medical problem without examining the patient, so how can you diagnose an election problem without examining the machines?” said Jennings Communications Director David Kochman. “It’s unfortunate that the state’s election officials were more concerned about sweeping the problem under the rug than finding out the truth about what went wrong with Sarasota County’s voting system.”

“This issue is too important for anything less than a real investigation by outside experts – not just for District 13, but for the millions of voters nationwide who vote on touchscreen machines,” added Kochman.

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www.christinejenningsforcongress.com**

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Sarasota Herald-Tribune (Florida)

November 14, 2006 Tuesday
ALL EDITION

Jennings takes legal action amid recount

BYLINE: By JEREMY WALLACE and DALE WHITE STAFF WRITERS

SECTION: A SECTION; Pg. A1

LENGTH: 1064 words

It didn't take long for the first legal action to be taken in the disputed congressional race, signaling how big a role the courts may ultimately play in deciding who represents the 13th District.

In the five counties comprising the district, elections supervisors and canvassing boards on Monday launched a recount of votes for Vern Buchanan, the Republican nominee, and Christine Jennings, the Democratic nominee.

Hanging over that recount is an unusually high undervote in Sarasota County from the Nov. 7 election. More than 18,000 voters in Sarasota County left the race for Congress blank, causing many Democrats to speculate whether electronic voting machines failed to register votes that should have gone to Jennings.

It took just minutes for the recount, due to be completed on Wednesday, to hit its first snag.

One of the dozens of election observers questioned the procedures that Sarasota County Supervisor of Elections Kathy Dent was using. The recount got restarted 30 minutes later. Then, at the end of the day, Jennings' attorneys announced that they had filed an emergency petition with the Circuit Court to secure all voting machinery and data for possible further investigation.

"The number one goal is to ensure that every voter's intention is recorded and their votes counted," said attorney Jeffrey Liggio.

Buchanan's campaign spokeswoman Sally Tibbetts said the legal action had no basis and just shows Jennings is trying to "litigate a victory."

But Liggio said it doesn't mean Jennings is certain to file a lawsuit to challenge the election results later if the recount shows Buchanan still winning the hotly contested race.

While the courts have been an avenue used by candidates in other disputed elections, recount veterans say the ultimate arbiter in the dispute could be the House Speaker-to-be Nancy Pelosi, D-Calif. The U.S. Constitution makes the House of Representatives the final decider in disputes about who gains a seat there.

But national Democrats aren't talking as if they are preparing the cavalry to rescue Jennings should the recount show she lost.

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"We're watching, but we're not going to speculate on what is going to happen," said Drew Hammill, a spokesman for Pelosi.

The recount begins

Meanwhile, elections officials throughout District 13 started a recount ordered by the state. The final results won't be complete until later this week. Military and overseas ballots could arrive as late as Friday.

As of Monday afternoon, the Florida Department of State reported that Buchanan had a 377-vote lead over Jennings, less than 0.2 percent.

Yet that figure got adjusted slightly, narrowing the gap in Jennings' favor, as some counties finished counting provisional ballots.

The counting of 245 provisional ballots could prove vital in the close race.

Provisional ballots tend to favor Democrats, said Justin Pleasants, a University of Florida professor.

Voters can cast provisional ballots if they believe they're registered but their names aren't in the precinct books. Or if they've forgotten to bring a photo ID. Sometimes voters have been wrongly purged from the rolls or the voter goes to the wrong polling place, Pleasants said.

In each case, a provisional ballot can be filled out and elections officials determine later whether it is valid.

In Sarasota County, elections officials spent most of the day downloading data from 1,498 touch-screen machines for a recount that resumes today.

They had also reviewed 197 provisional ballots, concluding that 162 are valid. Those ballots will be counted today as well.

In Manatee County, elections officials will commence a recount of paper ballots this morning.

On Monday night, they invalidated 58 provisional ballots. They counted 39 provisional ballots for Jennings and 35 for Buchanan.

In Charlotte County, the recount of touch-screen votes matched the Nov. 7 tally. Elections officials counted one provisional ballot for Buchanan and five for Jennings.

In DeSoto County, a recount of paper ballots varied from last week's results. Buchanan gained a vote. Jennings lost four. Elections officials there have yet to unseal and count a provisional ballot.

In Hardee County, officials completed the rescanning of more than 4,200 paper ballots. This morning, they will conduct a recount of those votes, unseal two provisional ballots and recount the ballots of 58 voters who opted to use touch-screen machines.

Hardee's canvassing board set aside two paper ballots for further review. In both cases, the voter had circled or blacked out Jennings' party designation instead of the bubble next to her name.

Buchanan and Jennings did not attend the recounts. Both spent the day in

Washington, D.C., attending an orientation for new members of Congress.

Reaching across the aisle

Although the U.S. House could ultimately decide the race, political insiders say Pelosi and other Democrats have to measure their responses to assure the American public that they are focusing on key issues rather than making an overtly partisan stand.

Congress has twice before, most recently in 1984, stepped into disputed elections and seated a member.

Former U.S. Rep. Bill Paxon, R-N.Y., who now lives on Longboat Key, said it would be a disaster to try to seat Jennings over Buchanan. He said when Democrats sat Rep. Frank McCloskey over Republican Richard McIntyre after a disputed election in Indiana, it created years of ill will between the parties.

"It would be a highly partisan move," Paxon said.

Pelosi is already under pressure to prove Democrats will work with Republicans and President Bush rather than turn Congress into gridlock and seek revenge for 12 years of being in the minority party.

"We've got to break down walls and reach across the aisle," said U.S. Rep. Allen Boyd, D-Monticello. "This is not about retaliation for our folks."

Boyd said it's too early to know what role Congress will want to play.

Expending too much political capital on Jennings could also send a bad message to the American public in other ways, said University of South Florida political science professor Susan MacManus. She said if Democrats engage in a prolonged legal war for Jennings, it may appear to the public that they are distracted.

"They need to be focused on national issues rather than this one race," MacManus said.

Staff writers Doug Sword, Todd Ruger, Zac Anderson, Erin Bryce, Kate Spinner and Anthony Cormier contributed to this report.

LOAD-DATE: November 15, 2006

LANGUAGE: ENGLISH

GRAPHIC: PHOTO 3

STAFF PHOTO / E. SKYLAR LITHERLAND / elaine.skylar@heraldtribune.com A worker on the recount team holds up a printed list of precinct totals retrieved from a touch-screen voting machine on Monday. NYTRNG PHOTOS / ANDREW COUNCILL BUCHANAN STILL LEADS Vern Buchanan talks inside the U.S. Capitol on Monday. The Florida Department of State reports that Buchanan has a 377-vote lead over Christine Jennings. JENNINGS OPTIMISTIC Christine Jennings arrives at the Capitol on Monday. She said she believes that when all the votes are counted, she will be the 13th District's representative.

PUBLICATION-TYPE: Newspaper

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**IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION**

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
from the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

No:

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, consisting of Governor Jeb
Bush, Chief Financial Officer Tom Gallagher, and State
Senator Daniel Webster; SARASOTA COUNTY
CANVASSING BOARD, consisting of Supervisor of
Elections Kathy Dent, Judge Phyllis Galen, and
Commissioner Paul Mercier; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; and VERN BUCHANAN,
as nominee of the Republican Party for Representative
in Congress from the State of Florida's Thirteenth
Congressional District,

Defendants.

COMPLAINT TO CONTEST ELECTION

1. This is an action to contest the Elections Canvassing Commission's November 20, 2006 certification that Vern Buchanan received 369 more votes than Christine Jennings in the election for the United States House of Representatives for Florida's Thirteenth Congressional District. The vote totals in the certification are wrong because they do not include thousands of legal votes that were cast in Sarasota County but not counted due to the pervasive malfunctioning of electronic voting machines. The number of uncounted votes in the County is

more than sufficient to call into doubt, indeed to change, the result of the election. Thus, Christine Jennings is entitled to appropriate relief under Section 102.168, Florida Statutes. It is critically important that this Court provide such relief promptly -- in the form of a new election -- to ensure that the will of the people of the Thirteenth District is respected, and to restore the confidence of the electorate, which has been badly fractured by this machine-induced debacle.

2. The Elections Canvassing Commission certified vote totals exclude the legal votes of thousands of Sarasota County voters who used the County's electronic voting machines to vote in the election for the Thirteenth District seat and did not have their votes recorded. Indeed, the electronic voting machines in Sarasota County failed to record votes in this race for one out of every seven voters -- nearly 15% of those who voted using the machines. There is no possibility that so many Sarasota County voters would have voluntarily abstained from voting in this hotly contested, high-profile race. Statistical analysis confirms that common-sense conclusion. Even more strikingly, the eyewitness accounts of hundreds of Sarasota County voters, and the contemporaneous records of the Sarasota County Supervisor of Elections, document that the electronic voting machines in Sarasota County used in early voting and on November 7, 2006 were systematically failing to record votes cast for candidates in the Thirteenth District congressional race -- particularly votes cast for Plaintiff Christine Jennings.

3. By law, every polling place in Florida displays a "Voter's Bill of Rights" stating that "Each registered voter in this state has the right to: . . . Vote on a voting system that is in working condition and that will allow votes to be accurately cast." § 101.031(2), Florida Statutes (2006). In the election challenged here, Sarasota County election officials failed to deliver on that promise. Indeed, the failure to count the legal votes of the thousands of Sarasota County voters who went to the polls and cast votes in the Thirteenth District race is a miscarriage of the

electoral process that can -- *and must* -- be remedied in this contest action. These voters should not forfeit their constitutional right to vote because the County's machines malfunctioned. Yet disenfranchisement is exactly what will happen unless the Election Canvassing Commission's certification is declared void. If the uncounted legal votes in Sarasota County had been properly recorded and counted, Plaintiff would be entitled to prevail in this race. The voting percentages in the County ran significantly in Plaintiff's favor. The votes she lost due to machine malfunction would thus be more than enough to reverse the razor-thin margin Defendant Buchanan holds in the certified result. Thus, the current election result cannot stand. The voters of the Thirteenth District -- all of the voters, including those disenfranchised by machine failure -- should decide the outcome, and the proper remedy is therefore to hold a new election in the district as promptly as possible.

Common Allegations

4. This is an action to contest an election under Section 102.168, Florida Statutes, which provides that the outcome of an election "may be contested in the circuit court by any unsuccessful candidate for such office" based on the "rejection of a number of legal votes sufficient to change or place in doubt the result of the election." Fla. Stat. § 102.168(3)(c).

5. Section 102.1685, Florida Statutes, establishes Leon County as the proper venue for this action.

6. The Thirteenth Congressional District of Florida comprises all of DeSoto, Hardee, and Sarasota Counties, and parts of Charlotte and Manatee Counties.

7. Plaintiff Christine Jennings is the Democratic candidate for the Representative in Congress from Florida's Thirteenth Congressional District.

8. Section 102.111 creates the Elections Canvassing Commission and charges it with certifying elections and determining who has been elected for each office. Governor Jeb Bush, Chief Financial Officer Tom Gallagher, and State Senator Daniel Webster are the members of the Elections Canvassing Commission. Section 102.168(4), Florida Statutes, provides that the Elections Canvassing Commission is an indispensable and proper party defendant in contest proceedings for federal elections.

9. The Sarasota County Canvassing Board is constituted in accordance with Section 102.141, Florida Statutes, and is comprised of Kathy Dent, Supervisor of Elections; Phyllis Galen, county court judge, who acts as chair; and Paul Mercier, chair of the board of county commissioners. The Sarasota County Canvassing Board is charged with canvassing and certifying Sarasota County's elections to the Department of State.

10. Kathy Dent is the Supervisor of Elections of Sarasota County. Kathy Dent is a member of the Sarasota County Canvassing Board and in her capacity as Supervisor of Elections is charged with overseeing all federal, state, and county elections in Sarasota County.

11. Sue M. Cobb is the Secretary of State for the State of Florida. The Secretary serves as the State's Chief of Elections.

12. Dawn K. Roberts is the Director of the Division of Elections for the State of Florida.

13. Vern Buchanan is the Republican candidate for the Representative in Congress from the Florida's Thirteenth Congressional District. Section 102.168(4), Florida Statutes, provides that the apparently successful candidate is an indispensable party to any action brought to contest the election of a candidate.

14. On November 7, 2006 ("Election Day"), the State of Florida conducted an election for numerous offices, including the Representative in Congress from the Thirteenth District. Early voting and voting by absentee ballot were permitted for this election (as for all state elections).

15. For both early voting and voting on Election Day, Sarasota County made use of electronic voting machines, called "iVotronic" machines, manufactured by Electronic Systems & Software, Inc. Sarasota County does not use iVotronic machines (or any other electronic voting machines) for absentee balloting. For absentee balloting, Sarasota County uses paper ballots read by optical-scanning equipment.

16. The first unofficial results reported on November 8, 2006 for the Thirteenth District congressional race showed that in Sarasota County, there were 58,534 votes for Vern Buchanan, 65,367 votes for Christine Jennings, and 18,382 undervotes.

17. On November 13, 2006, the Elections Canvassing Commission ordered a machine recount for the race pursuant to Section 102.141(6), Florida Statutes, because the difference in votes cast between Vern Buchanan and Christine Jennings was less than 1/2 of 1 percent.

18. On November 15, 2006, the Honorable Sue M. Cobb, Secretary of State, released the results of the machine recount and ordered a mandatory manual recount pursuant to Section 102.166(1), Florida Statutes, because the difference in votes cast between Buchanan and Jennings was less than 1/4 of 1 percent. Broken down by county, the recorded vote totals after the machine recount were as follows:

	Buchanan	Jennings
Charlotte:	4,459	4,270
DeSoto:	3,467	3,056
Hardee:	2,628	1,684

Manatee:	50,053	44,365
Sarasota:	58,535	65,366

19. On November 15, 2006, the Secretary of State also reported an “undervote” of 21,303 for the congressional race. The term “undervote” describes a situation in which a voter cast ballots for other candidates or ballot measures but did not register a vote for the particular office. *See* § 97.021(37), Florida Statutes. Broken down by county, the undervote totals were as follows:

Charlotte:	174
DeSoto:	148
Hardee:	277
Manatee:	2,324
Sarasota:	18,380

20. The undervote total for the congressional race in Sarasota County is extremely abnormal in numerous respects, including the following:

a. A total of 88,927 ballots were cast in this race on Election Day in Sarasota County on the electronic voting machines. Christine Jennings received 39,930 votes and Vern Buchanan received 36,619 votes. There were 12,378 undervotes. The undervote rate on Election Day in Sarasota County was therefore an extraordinary 13.9% of the ballots cast on the electronic voting machines.

b. A total of 30,832 ballots were cast during the early-voting process in Sarasota County, on the same type of electronic voting machines. Christine Jennings received 14,509 votes, and Vern Buchanan received 10,890 votes. There were 5,433 undervotes. The undervote rate in the early-voting process in Sarasota County was therefore an extraordinary

17.6% of the ballots cast. And the combined undervote percentage for early and Election Day voting on the electronic voting machines was an equally extraordinary 14.9%.

c. In vivid contrast, of the 22,525 votes cast in this race by absentee ballot in Sarasota County (which were recorded by optical-scanning devices, not by electronic voting machines), Christine Jennings received 10,928 votes, and Vern Buchanan received 11,025 votes, and there were just 571 undervotes recorded -- a rate of only 2.53%, which is consistent with historical norms and expectations.

d. In equally vivid contrast, the percentage of undervotes for the House of Representatives race in other counties within the Thirteenth District did not remotely approach the undervote rates for the electronic voting machines in Sarasota County. The undervote rate for this race was 2.5% in Charlotte County, 2.2% in DeSoto County, 5.3% in Hardee County, and 2.4% in Manatee County. The combined undervote percentage for these four counties is only 2.5% -- one-sixth the undervote percentage recorded in Sarasota County for votes cast on electronic voting machines.

e. In addition, the undervote percentage recorded in Sarasota County for other high-profile races is a small fraction of the 14.9% undervote rate on electronic voting machines for the congressional race. For example, the undervote percentage recorded in Sarasota County for the Governor's race was 1.28% and the undervote percentage for the United States Senator's race was 1.14%.

f. Finally, the percentage of undervotes on electronic voting machines for the congressional contest in Sarasota County in 2006 is almost seven times the rate of undervotes for the Thirteenth District congressional race in 2002 (the last midterm election), which was 2.2%.

21. In 2001, Sarasota County became the first county in Florida to use the iVotronic voting system. They have been used since 2001 in at least 19 separate primary, general, and local elections. In the 2006 election, Sarasota County voters were asked whether to adopt a proposed county charter amendment requiring that as of January 1, 2008, all county voting systems provide a voter-verified paper ballot and that mandatory audits of election results be conducted in every election comparing hand counts to machine counts. The county adopted the proposed charter amendment with the support of 55.4% of voters, indicating that voters themselves have lost confidence that the iVotronic system is capable of correctly recording their votes. Significantly, the undervote rate for this proposed charter amendment was only 6.2%.

22. The statistical evidence alone indicates that the staggeringly large number of undervotes in Sarasota County is due to the malfunctioning of the iVotronic electronic voting machines. In fact, preliminary expert statistical analysis of the reported election results concludes there is little doubt that the use of the iVotronic machines in Sarasota County caused the extraordinarily high rate of undervotes in that county. The fact that undervote rates from the rest of the district and from absentee voters in Sarasota County were so much lower than rates from voters using the iVotronic machines in Sarasota County rules out the possibility that the extraordinarily high Sarasota County undervote rates were caused by factors common throughout the district --- such as voter abstention due to negative campaigning or dissatisfaction with both candidates. Evidence that such alternative explanations were causing high undervote rates would have shown up throughout the district, not in a single county, and not just among one type of voting machine in that county. Additionally, the fact that a higher undervote rate was present on identical electronic voting machines in two different modes of voting that occurred at different times --- early voting (from October 23 to November 5) and Election Day voting (November 7) -

-- creates an overwhelming suspicion that the problems pertain to the use of these electronic machines in Sarasota County.

23. It is extremely unlikely that an undervote rate of the magnitude that occurred in Sarasota County can be principally attributed to voter confusion or ballot design. Even the most egregious examples of voter confusion caused by ballot design in other races do not yield undervote percentages remotely as high as those present in the Thirteenth District congressional race. For example, the infamous "butterfly ballot" used in Palm Beach County, Florida in the 2000 presidential race caused fewer than 1% of the presidential votes cast in that election to be erroneously cast for the independent candidate Pat Buchanan. Moreover, because of pervasive problems with electronic voting machines during early voting in Sarasota County -- widely reported in the press before and on Election Day and in public statements by Sarasota County Supervisor of Elections Kathy Dent -- Sarasota County voters were alert to the risks of ballot confusion, and thus highly unlikely to have fallen victim to it.

24. As powerful as this statistical evidence is, it is far from the only indication that thousands of legal votes in Sarasota County simply were left out of the certified election results for the congressional race because of the failure of electronic voting machines. A variety of contemporaneous sources document widespread problems with the iVotronic electronic voting machines in Sarasota County. These documents, including both the statements of voters and contemporaneous records maintained by the Sarasota County Supervisor of Elections, identify a consistent pattern of voter difficulty in having their votes recorded in the House of Representatives race -- and not in other races on the ballot.

25. Plaintiff has obtained affidavits memorializing the eyewitness accounts of hundreds of Sarasota County voters attesting to their difficulties attempting to cast a vote for

Christine Jennings in early voting and on Election Day on iVotronic electronic voting machines in Sarasota County. The following statements are representative of the memorialized eyewitness accounts of these hundreds of voters:

- “I went through the ballot making my selections on the I votronics touch screen voting machine and took my time making sure that I voted in every race. I am certain that I cast a vote for Christine Jennings. When I reviewed the ballot at the end of the voting process, I noted that the race for the 13th congressional district . . . indicated that I had made no selection. I double-touched the 13th Congressional District race and again cast my vote for Christine Jennings. . . . I have more than 15 years experience in selling computer systems, five of those years are in selling touch screen systems. Based on my experience, I believe there was a software bug in the voting machine software causing the software not to register the touch.”
- “I took a sample ballot, which I had previously filled out and my intention to vote in every race. I believed that I voted for Christine Jennings but I came to the review screen it said I had not cast a vote in the Congressional race. . . . I used the back arrow and it took me back to Congressional race and I recorded a vote for Christine Jennings.”

- “When my husband and I voted on the iVotronics touch screen voting machines, I was told by a poll worker to be sure and check the District 13 Congressional race because several voters, even at that early hour, had complained that they had voted for Christine Jennings, but the summary page did not reflect their votes for Christine Jennings.”

- “When I voted on the iVotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it did not show a vote for Christine Jennings or anyone else.”

- “There was no warning or mention of any problems however, I was aware there may be a problem with the Congressional vote based on various media reports. I went through the ballot and specifically remember voting for Christine Jennings. When I arrived at the review screen, there was no candidate selected for the Congressional vote. I called a poll worker over and explained the situation and she told me that I did not ‘press hard enough’ when selecting the vote and I then returned to the vote screen and recast my ballot, I then confirmed it on the review screen.”

- “When I voted on the touch screen voting machine I touched the screen voting for Christine Jennings and when I reached page 15, the summary page, it indicated that I had not voted for Jennings. I immediately called

this to the attention of a poll worker who showed me how to go back and vote for Jennings. I followed her instructions and again voted for Jennings. It did appear on the summary screen this time and I hope was duly registered.”

- “When I voted on the ivotronics touch screen voting machine I touched screen and voted for Christine Jennings for U.S. Congress Florida District 13. When I reviewed my ballot before hitting the red button and actually voting, I saw the review screen did not show a vote for Christine Jennings. I was afraid I would lose my other votes if I tried to go back and correct the problem, so I then went ahead and cast my ballot without confirming that the machine had registered my vote for Christine Jennings.”
- “I attempted to vote for Christine Jennings in the District 13 race and experienced the following difficulties: I was well-aware of the difficulties in the early voting in District 13 race and so I carefully voted in each election on the ballot, including that race. When I got to the review page, my vote for Christine Jennings was not reflected. I called out to a poll worker to alert them that my vote in the District 13 race had not been recorded. The poll worker who came to assist me informed me that the same thing had happened to her when she had voted earlier. She guided me back to the District 13 page and I pressed the touch screen again to reflect my vote for Christine Jennings. The poll worker then guided me

back to the review page where my vote in the District 13 race was reflected and I then pressed the vote button.”

- “When I voted on the ivotronics touch screen voting machine, I went through the ballot to vote. I was being careful because I seemed to have to press hard for my votes to register. In addition, I knew to be careful because my wife had been to vote previously and had overheard some women who had a problem voting discussing their problems with the machines. They were different machines. A neighbor also told me that she had encountered six different people who had a problem with the voting machines. When the review sheet came up it said that I had not voted in the Congressional race even though I knew I had voted for Christine Jennings. I went back and registered my vote again and this time it indicated that I had voted for Ms. Jennings on the review screen.”
- “When I voted with the stylus on the ivotronics touch screen voting machine, I am absolutely sure the box for Christine Jennings showed the X. On the Review screen, however, Christine Jennings’ name showed but the box beside her name was blank. I clicked on the review ballot and corrected my vote and it then showed an X beside her name. After that, I registered my vote with the Red button at the top of the screen. After voting, I asked my husband if anything unusual happened when he voted (on a different machine). He told me that when he reviewed his ballot, the

box by Christine Jennings' name was blank and he had to correct it. At that time, I reported this to a poll worker named Charlie, who said he would report it.

- “I had heard prior to going to the poll that there were problems with the voting machines. When I went to vote, the poll worker also warned me that there had been problems with the machine registering the Congressional race. When I voted on the iVotronics touch screen voting machine, I voted for Christine Jennings. The screen indicated I had voted. Yet when I got to the end, the review page indicated that I had not voted in the Congressional race. I went back and voted for Ms. Jennings. This time my vote did register on the voting page.”
- “When I voted on the iVotronics machine I was being very methodical. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure that the box was checked before I went to the next page. When I got to the review screen it reflected no vote was cast for the Congressional race, but both candidates' names were shown. All of my other selections were properly recorded. I touched where it said no vote had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and carefully rechecked the review page three times. I then pushed the vote button. No report was made to the poll worker. Prior to voting, the poll

worker recommended that I check the review page before casting my final ballot. I am a registered Republican and I believe these machines failed democracy.”

- “I voted on the iVotronics machine I took my time to be sure I did not make any errors. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure the box was checked before I went to the next page. When I got to the review screen it reflected no vote was cast for the Congressional race. All of my other selections were properly recorded. I touched where it said no vote had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and I then pushed the vote button. “
- “When I voted on the ivotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it not only failed to show a vote for Christine Jennings, but the only name to appear on the review page was Christine Jennings, next to a blank box indicating no vote had been cast. I called a poll worker over and explained what had happened and the poll worker pulled back the page for the Congressional race. I revoted for Christine Jennings, and my vote appeared to register in my second review of the summary screen.”

- “When I voted on the touch screen voting machine I encountered two problems with the machine. First, after I had voted for Christine Jennings on the top of the second screen, when I pushed my selection for Jim Davis for Florida Governor next, the “X” on the computer screen came up indicating that I had voted for Charlie Crist. I called a poll worker, advised her of the problem and she showed me how to change my vote to Jim Davis. I then proceeded to vote on every race I saw on the ballot. When I got to the review screen, it showed Christine Jennings name, but unlike all the other names and races on the review screen, there was no X in the box next to Christine Jennings’ name. I am certain that I had initially cast a vote for Christine Jennings as my two main purposes in voting were to vote for Christine Jennings for Congress and Jim Davis for Florida Governor. I again called a poll worker who told me to hold my finger down on the box next to Christine Jennings name on the review screen until the X came up. I did so and then pushed the ‘Vote’ button.”
- “When I arrived at the polls I was warned by a poll worker that some votes from ‘page 2’ were not being registered. I waited on line for 45 minutes to vote and when I returned home, informed my wife of what I had been warned.”
- “I had heard earlier media reports and was aware that there were some problems with the machines. When I arrived, I specifically asked if there

had been problems and I was told no issue or problems had arisen. I voted for Christine Jennings on a touch screen and when I arrived at the review page the Congressional vote was left blank. I called a poll worker over at that time and she showed me how to move back and I re-cast my vote for Christine Jennings. On the final review page, I confirmed my vote was cast. I approached a poll worker to complain about the situation and filled out a complaint card.”

26. These eyewitness accounts, and hundreds of others like them, attest to pervasive difficulties in the recording of votes in the Thirteenth District congressional race. Although many of these voters believed that they were able eventually to overcome the machine difficulties and cast a recorded vote for Plaintiff Christine Jennings, the problems the iVotronic machines exhibited in recording the legal votes of these and thousands of other voters provide substantial grounds for doubting whether the votes were in fact counted. The information voters see on the touch-screen of an electronic voting machine when they cast their votes is stored in the machine’s temporary, volatile computer memory. A permanent record of a vote is made only when -- upon pressing the “Vote” button -- the voter’s recorded preference is transferred from the temporary volatile memory on the computer to permanent nonvolatile memory. If, as the statistical evidence suggests is overwhelmingly likely, a software “bug” or other malfunction disrupts or prevents the transfer of the recorded legal vote from temporary to permanent memory, the voter may well see a vote cast for Jennings on his or her review screen even though no permanent record of the vote is ever recorded.

27. Poll watchers also reported their observations of widespread occurrences of voters being unable to have their votes in the congressional race recorded by iVotronic electronic voting

machines. One poll watcher reported as follows: “There were seven ivotronics touch screen voting machines at the precinct where I was watching the voters. Two of the ivotronics touch screen voting machines stopped working while I was watching the voters. After an hour or so, one was repaired and put back into service. The other was put back into use without repair except that the poll workers instructed voters to hold their finger on the touch screen for more time, rather than just touch [the] screen to get the vote to register. I heard several voters tell poll workers the ivotronics touch screen voting machine was not recording their vote.”

28. Contemporaneous official “Incident Report Forms” of the Sarasota County Supervisor of Elections likewise document widespread occurrences of voters having great difficulty in having the iVotronic electronic voting machines record their votes in the Thirteenth District race. Numerous such forms noted that iVotronic electronic voting machines were “not recording votes.” One report from a particular precinct noted that a “voter voted on screen -- didn’t show up on review . . . asked poll worker for help . . . [c]ancelled ballot and moved to another machine,” and went on to observe “more than one [voter] with trouble on machine.” Another incident report observed that “[e]very other voter is complaining about the Christine Jennings contest not coming up.” Indeed, these incident reports document multiple instances of frustrated voters telling election officials at the polling places that “voting machine[s] would not let her vote for Jennings.”

29. Other contemporaneous official forms maintained by the Sarasota County Supervisor of Elections similarly document that iVotronic electronic voting machines used in the County were not recording the votes that voters had cast. Machines were taken out of service on Election Day because they were “slow to respond to touch” or “required a hard/extended touch before [a] vote was recognized,” or because they were “not recording some votes [and] the

touchscreen was not working properly -- hard to record vote, needed to push hard and juggle to record vote," or because they were "not accepting votes." Technical support personnel reported receiving "several complaints that voters make selections that do not appear on the summary screen" and that "the selection has to be highlighted . . . two or three times before the summary page reflected the suggestions." Other reports indicate that "voters reported making a selection but the selection did not appear on the review screen," requiring further corrective action by the voter, and that particular machines "miss[] selections on some pages." One report by a Sarasota County technical support person indicated that a particular electronic voting machine "will not register votes no matter how hard you press screen."

30. Significantly, the records of the Sarasota County Supervisor of Elections document that election officials were on clear notice, as a result of the extreme difficulties many voters encountered during the early-voting phase, that the iVotronic electronic voting machines were malfunctioning with respect to the Thirteenth District congressional race. Nevertheless, the County election officials do not appear to have taken *any* steps to correct the serious machine problems in advance of Election Day.

31. This machine-induced failure had significant, indeed, determinative, effects on the outcome of the election for the Thirteenth District congressional seat. Preliminary statistical analysis (based on the undervote rates for the election in Sarasota County absentee ballots, and in other counties) indicates that more than 14,000 Sarasota County voters (the differential over and above the expected undervote rate) cast legal ballots but failed to have their legal votes recorded. Given that the certified election results give Defendant Buchanan a lead of only 369 votes, and given that Plaintiff Jennings carried Sarasota County while Defendant Buchanan carried the rest of the district, the failure to include 14,000 or more votes in the final tally places the outcome of

the election into grave doubt. Indeed, preliminary statistical analysis indicates that inclusion of these 14,000 or more Sarasota County votes would change the outcome of the election, because the Sarasota County voters whose votes were recorded in the election favored Plaintiff Christine Jennings by a significant margin.

Count I

32. Plaintiff realleges paragraphs 1 - 31.

33. As a result of the failure of iVotronic electronic voting machines to record all legal votes cast in the Thirteenth District congressional race in Sarasota County, thousands of votes legally cast in that race were not included in the vote totals certified by the Elections Canvassing Commission on November 20, 2006. The failure to include these votes constitutes a rejection of a number of legal votes sufficient to place in doubt, and likely change, the outcome of the election.

34. Given the extremely narrow margin of 369 votes in the certified election results, it is self-evident that the number of uncounted legal votes in Sarasota (which preliminary statistical analysis reveals to be at least 14,000) is sufficient to place in doubt, and likely change, the outcome of the election.

35. Given the relative percentages of the actual votes cast in Sarasota County in the Thirteenth District election, it is likely that including the uncounted legal votes cast in Sarasota County would change the outcome of the election and result in a victory for Plaintiff Christine Jennings.

36. Therefore, under Section 102.168, Florida Statutes, Plaintiff Christine Jennings is entitled to prevail in this contest action, and should be awarded all appropriate relief.

Prayer for Relief

Wherefore, Plaintiff prays that the Court:

1. Advance this matter on the Court's docket.
2. Order immediate discovery as requested in the accompanying motion, which is necessary to determine conclusively the cause of the massive undervote in Sarasota County.
3. Convene a status conference promptly to establish an expeditious schedule for completing discovery and conducting a hearing.
4. Set this matter for a prompt hearing pursuant to Section 102.168(7), Florida Statutes.
5. Order the Elections Canvassing Commission to declare void the results of the 2006 general election for Representative from Florida's Thirteenth Congressional District.
6. Order the Elections Canvassing Commission to decertify Vern Buchanan as the winner of the 2006 general election for Representative from Florida's Thirteenth Congressional District. *See* Fla. Stat. § 102.1682.
7. Enter a finding that Plaintiff is entitled to the office of Representative from Florida's Thirteenth Congressional District, Section 102.1682, Florida Statutes, or, in the alternative, declare the congressional seat for Florida's Thirteenth Congressional District vacant such that a special election shall take place pursuant to Sections 100.101(1) and 100.111(3), Florida Statutes, or order a new election to determine the winning candidate for the United States House of Representatives seat.
8. Order all other appropriate relief, including an award of fees and costs.

Respectfully submitted this 20th day of November, 2006 by:

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**IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION**

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
from the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

No: **06CA2973**

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, consisting of Governor Jeb
Bush, Chief Financial Officer Tom Gallagher, and State
Senator Daniel Webster; SARASOTA COUNTY
CANVASSING BOARD, consisting of Supervisor of
Elections Kathy Dent, Judge Phyllis Galen, and
Commissioner Paul Mercier; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; and VERN BUCHANAN,
as nominee of the Republican Party for Representative
in Congress from the State of Florida's Thirteenth
Congressional District,

06 NOV 20 AM 11:14
 CIRCUIT CIVIL DIV
 CLERK CIRCUIT COURT
 LEON COUNTY, FLORIDA

Defendants.

PLAINTIFF'S MOTION TO COMPEL EXPEDITED DISCOVERY

1. Based on the extraordinary number of undervotes recorded by iVotronic touchscreen voting systems in Sarasota County in the 2006 general election for Representative in Congress from Florida's Thirteenth Congressional District, Plaintiff Christine Jennings has initiated an election contest proceeding under Section 102.168, Florida Statutes. Plaintiff seeks to demonstrate that pervasive malfunctioning of the iVotronics voting systems manufactured by Electronics Systems & Software, Inc. caused at least 14,000 of the 18,382 undervotes reported in

the congressional race. In a race decided by just 369 votes, the number of undervotes is patently sufficient to cast doubt on the outcome of the election.

2. To determine the root cause of the pervasive malfunction of the iVotronics voting system and to assist the Court in establishing the reason for the extraordinary undervote in this race, Plaintiff must obtain expedited discovery of the items discussed herein, including logs generated by the iVotronic system, samples of the hardware on which the election was conducted, and the software used to operate that hardware. Therefore, Plaintiff hereby moves to compel, on an expedited basis, discovery required by Florida Rule of Civil Procedure 1.280. In view of the enormous public interests at stake, the pressing need for a prompt resolution of this matter, and the limited nature of the discovery requested in the accompanying Requests for Production, Plaintiff respectfully requests that this Court grant this motion by 12:00 noon on Tuesday, November 21, 2006, and that Defendants comply with the discovery sought herein by 5:00 p.m. on Wednesday, November 22, 2006, so that Plaintiff's experts can commence their analysis and testing immediately. *See Jacobs v. Seminole County Canvassing Bd.*, 2000 WL 1720698 (Fla. Cir. Ct. 2000) (granting an election-contest plaintiff's motion for expedited discovery); *cf.* Fla. Stat. § 102.168(6) (expediting the normal deadline for filing an answer in an election contest).

3. Plaintiff intends to establish that significant numbers of the undervotes are due to machine malfunctions in the iVotronic touchscreen voting systems and/or related equipment from the iVotronics' manufacturer, Election Systems and Software, Inc. ("ES&S"), including ES&S's Unity software suite. As explained in the expert affidavits attached to Plaintiff's Complaint To Contest Election, determining the causes of the irregularities requires analysis of certain documents in the Defendants' possession and examination of a select sample of iVotronic

machines and related equipment. *See* Declaration of MIT Political Science Professor Charles Stewart III on Excess Undervotes Cast in Sarasota County, Florida, for the 13th Congressional District Race [hereinafter “Stewart Decl.”]; Declaration of Rice University Computer Science Professor Dan S. Wallach [hereinafter “Wallach Decl.”].

4. Given the pace at which these proceedings must move forward, Plaintiff seeks the following discovery on an expedited basis:

- Logs: all “event logs” (or “audit logs”) and “ballot-image logs” (or “ballot-image summaries”) in digital form (on a recordable compact disc), as produced by the Unity software suite, covering every voter who voted or attempted to vote on an iVotronic voting machine used in early voting or in Election Day voting in Sarasota County in the recent election; and a list of the machines, by serial number, that were used in each precinct and each early-voting station;
- Machines: temporary access to eight iVotronic machines that generated particularly high undervote rates in the recent congressional election in Sarasota County, including at least one machine used on Election Day in each of six specified precincts (Precincts 31, 44, 74, 105, 117, and 118) and at least one high-undervote machine used in early voting; the carrying cases for those iVotronic machines, power adaptors, and other apparatus to set up the voting booths; two supervisor personalized electronic ballots (“PEBs”); nine regular PEBs (one configured for each ballot style used in Sarasota County in the recent election); a standard ES&S “Communications Pack” (containing a thermal printer and all the necessary cabling); one PEB reader for transferring data from a PEB to a standard personal computer; permission to physically open and inspect the internal components of one iVotronic machine and one PEB; any necessary tools and documentation to extract and read the “three redundant memories” contained within the iVotronic machines; election-definition files and other necessary data (including passwords) to configure an iVotronic for each of the nine ballot styles used in Sarasota County in the recent election; digital copies of the ballot-style files for all nine ballot styles; and every file that was loaded onto an iVotronic machine as part of the “ballot programming” process, either for early voting or for Election Day voting;
- Software: a full copy of all ES&S source code to the iVotronic system as used in the recent election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a); a full copy of all ES&S source code to all elements of the Unity software suite as used in the recent election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a); a full copy of all ES&S source code to the PEBs as used in the recent election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a); all necessary development tools, scripts,

“makefiles,” and other software as used in the recent election in Sarasota County to compile, debug, and test the iVotronic system, the PEBs, and the elements of the Unity software suite; and a copy of all user manuals, operator manuals, training materials, and other documentation related to the use, operation, or maintenance of any part of the iVotronic system, the Unity software suite or any of its elements, or the PEBs.

See generally Wallach Decl. at 6-16 (describing in detail how each of these items would be used to help conduct an exacting and thorough forensic investigation of the undervote); Stewart Decl. at 2 (statistically analyzing undervote rates in the 2006 elections and concluding that there is a “substantial possibility that the exaggerated undervote rates in Sarasota County were . . . caused by factors related to machine malfunction”).

THE PROPOSED DISCOVERY IS REQUIRED BY FLA. R. CIV. P. 1.280

5. Florida Rule of Civil Procedure 1.280 permits parties to “obtain discovery regarding any matter, not privileged, that is relevant to the subject matter of the pending action.” Fla. R. Civ. P. 1.280(b)(1). The requested discovery is critical both to Plaintiff’s ability to prove her case and to satisfying the public’s legitimate concerns of disenfranchisement currently encircling this election. The eight machines requested cover six precincts in which the abnormal undercounts were especially pronounced. Once the logs and those eight machines and their accompanying software are obtained, Plaintiff’s experts will use them to simulate and analyze Election Day events. Starting from the logs that track each vote cast, Plaintiff’s experts will script out, re-enact, and record on videotape a realistic reconstruction of Election Day events on the affected machines. With a few, controlled variations, Plaintiff’s experts can test different hypotheses offered to explain the thousands of undervotes and can begin to assess the likely contributions of these explanations. *See* Wallach Decl. at 12.

6. This videotaped “election reconstruction test” would be conducted by the same expert, following virtually the same protocol, as was used earlier this year in Palm Beach

County. That expert is Jocelyn Whitney of JBS Associates in Tucson, Arizona. The results of that Palm Beach County videotaped test showed that the machines (which were not manufactured by ES&S) had not malfunctioned; similar tests conducted elsewhere have demonstrated that certain voting machines have malfunctioned. *See, e.g.*, Wallach Decl. at 1, 11, 13, 15.

7. Plaintiff's experts' proposed simulation of Election Day events on the six machines will proceed in several steps. With the six selected machines programmed as they were on Election Day, right down to the time and date settings, the ballot-image logs and event logs will be used to create test scripts of the day's events. The scripts will include various "voter scenarios," in which voters will (a) change a specified vote selection while on the same screen; (b) change a specified vote selection after advancing one or more screens; (c) from the confirmation screen (sometimes referred to as the "review" or "summary" screen), return to a contest and change the vote selection and quickly scroll to the confirmation screen; (d) from the "cast ballot" screen (but before casting the ballot), return to a specified contest and change a vote selection; (e) from the confirmation screen, return to a specified contest and make no change, and slowly scroll to the confirmation screen; (f) from the confirmation screen, return to a specified contest and change the vote selection to "no selection made," or blank, quickly scroll to the confirmation screen, return to the specified contest, reselect a candidate, and slowly scroll to the confirmation screen; and (g) from the confirmation screen, return to a contest with "no selection made," make a selection, and then scroll to the confirmation screen. For the undervoted congressional race, the scripts shall provide for the selection of one of the two candidates, or no candidate, randomly. For all other offices and measures, the scripts will follow the actual behavior of real voters, based on the precise data contained in the ballot-image logs.

8. The scripts will then be executed by testers at assigned times, based on the actual event log's record of Election Day voting, on the designated machines during a mock Election Day. Testers will be instructed to confirm that their vote selections are consistent with the script and, if they are, cast their ballot so that a video camera can confirm their selections. An observer will also be present to check the vote selections for consistency with the test script. A director, present throughout the testing, will sign off on reports prepared by the observer whenever there is a discrepancy between a vote and the test script. The video camera will be focused on and will record activity on the iVotronic screen throughout the test.

9. Once the testing is complete, the data will be promptly analyzed. Printouts from each machine will be compared to the expected baseline tally figures to identify any inconsistencies between the actual results and the expected baseline tally figures. Discrepancy reports, test scripts, and the videotapes will be reviewed to analyze any inconsistencies and the effect they would have on the actual results.

10. Once the reconstructed Election Day is completed, and the votes tallied by the iVotronic have been reconciled with the votes expected to be tallied according to the test scripts and videotapes (taking into account the noted discrepancies), a test summary report or report of findings will be prepared.

11. The other major aspect of an exacting and thorough forensic investigation is to have voting-machine and software experts test samples of the hardware and examine the source code (or "program code") that operates the iVotronic voting system. Examining the source code is absolutely necessary to determine the cause of the voting-machine irregularities at issue in this case. *See* Wallach Decl. at 13-15. For example, a software "bug" or other malfunction could disrupt or prevent the transfer of certain votes from the machine's temporary memory to its

permanent memory, so that the voter might well see a vote cast for a particular candidate on his or her confirmation screen even though no permanent record of the vote will ever be recorded. *See id.* at 14. Finally, physical review of the machines and their internal memory devices will help determine whether the software or firmware in the machines has been modified in certain ways to introduce bias into the machines' cast-vote records.

**THERE IS NO BASIS FOR REFUSING OR DELAYING
THE PROPOSED DISCOVERY**

12. Prior to certification of the election, Plaintiff requested nearly identical information and items in proceedings in the circuit court for Sarasota County. During a hearing in that court on November 16, 2006, counsel for Defendant Vern Buchanan, the Republican nominee for the congressional seat, expressly acknowledged that, whether or not that discovery was permitted in the Sarasota County action, Plaintiff *is* entitled to this discovery in the election contest proceedings here. Specifically, Mr. Buchanan's counsel stated: "If this were a contest, what plaintiff's counsel is asking for would be appropriate If they want to bring a contest action Monday, we can then move into the formal discovery phase." Indeed, Mr. Buchanan's counsel expressly argued that the discovery was not appropriate in Sarasota County precisely *because* Plaintiff would be fully entitled to the information in this Court. Neither the counsel for the Secretary of State nor the counsel for the Sarasota County Supervisor of Elections expressed any disagreement with these statements. So there should be no objections to the proposed discovery from Buchanan or the Secretary or the Supervisor. Indeed, any such objections would be misplaced in any event, for four reasons.

13. *First*, Florida law gives Plaintiff a clear right to examine the machines and related software in the careful manner here. As with a request for "permission to enter upon land or

other property for inspection and other purposes,” Fla. R. Civ. P. 1.280(a), examination of computer equipment is appropriate so long as the examination is likely to retrieve relevant information and there are no less intrusive means of gathering it. *See Strasser v. Yalamanchi*, 669 So. 2d 1142, 1145 (Fla. 4th DCA 1996). The protocol proposed by Plaintiff’s experts is carefully crafted to obtain only information critical to this investigation. No aspect of the inquiry is more intrusive than necessary to resolve the critical issues before this Court.

14. *Second*, although the software may belong to a third-party vendor, there is no doubt that the Secretary of State is plainly able to produce it, and must produce it in response to a court order. Florida law requires that it be held in escrow by the Secretary of State. Fla. Stat. § 101.5607(1)(a). Any promises that the Secretary may have made to the vendor regarding the software’s confidentiality cannot justify withholding the software in response to a proper discovery request. *See Procter & Gamble Co. v. Swilley*, 462 So. 2d 1188, 1195-96 (Fla. 1st DCA 1985) (concluding that “the right to every man’s evidence” trumps party’s promise not to disclose researcher’s data). That is especially true given the fundamental rights and overarching public interests at stake here. *See, e.g., Burson v. Freeman*, 504 U.S. 191, 198 (1992) (calling the right to vote “a right at the heart of our democracy”); *Broward County v. Kerr*, 454 So. 2d 1068, 1070 (Fla. 4th DCA 1984) (“Discovery which is otherwise appropriate should not be refused solely because production of documents would hamper a party’s business operations.”). To the extent the materials constitute trade secrets, Plaintiff’s experts will enter a nondisclosure agreement prohibiting team members from divulging trade secrets or other proprietary information, and Plaintiff agrees to the imposition of an appropriate protective order, and further agrees to produce public and nonpublic versions of any findings as this Court deems appropriate.

15. *Third*, the ballot-image and event logs requested can be produced easily in the format Plaintiff has requested. The Unity software suite creates these logs, which track the votes cast (without identifying the voter) and the times at which the votes were recorded, as a matter of course, and the files can be transferred onto a CD with ease — literally in a matter of minutes. While they may contain a large number of records, producing them is not a burden. *See Coastal Physician Servs. of Broward County, Inc. v. Ortiz*, 720 So. 2d 324, 327 (Fla. 4th DCA 1998) (“Other than the number of potential recipients of the form bill, petitioner has made no showing that the disk or computer tape would require substantial effort to produce. In fact, we think that the information may be very easily retrieved from the computer.”). These logs are public records and cannot be withheld. (Indeed, they currently are the subject of a public-records request that Plaintiff has made to Defendant Dent, who has been busy with recount activity and has not yet produced them.)

16. *Fourth*, there is no other way to obtain this information. To determine what went wrong with certain machines in identified precincts in this election, there is no substitute for examining those particular machines and recreating the circumstances in which they were used. Although the Secretary of State has announced a state audit of what went wrong, it will not substitute for the discovery sought here. The state audit is a forward-looking inquiry designed to address long-term policy considerations about the efficacy of certain voting systems, rather than the key question here — whether faulty voting machines and systems rejected enough legal votes to change or place in doubt the result of the election. Fla. Stat. § 102.168. And more fundamentally, no state audit — overseen by the same actors who oversaw the certification of the allegedly defective voting machines — can have the independence necessary for adversarial judicial proceedings. To the contrary, barring the Plaintiff’s proposed audit because the

Department of State is conducting its own would be like forcing a malpractice plaintiff to rely on the defendant doctor's analysis of his own actions. *See Moore v. Schlesinger*, 150 F. Supp. 2d 1308, 1313 (M.D. Fla. 1991) (recognizing that discovery "within the adversarial arena" has the benefit of "the attendant safeguards of the judicial process"). There is thus no likelihood that the information sought here can be obtained through other means.

CONCLUSION

For the foregoing reasons, the Court should grant Plaintiff's Motion to Compel Expedited Discovery.

Respectfully submitted this 20th day of November, 2006 by:


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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing was transmitted via
facsimile or e-mail, and overnight mail this 20th day of November, 2006, to:

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**IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION**

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
from the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

No: *2006 CA 2973*

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, consisting of Governor Jeb
Bush, Chief Financial Officer Tom Gallagher, and State
Senator Daniel Webster; SARASOTA COUNTY
CANVASSING BOARD, consisting of Supervisor of
Elections Kathy Dent, Judge Phyllis Galen, and
Commissioner Paul Mercier; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; and VERN BUCHANAN,
as nominee of the Republican Party for Representative
in Congress from the State of Florida's Thirteenth
Congressional District,

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CLERK OF COURT
LEON COUNTY, FLORIDA
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Defendants.

**PLAINTIFF'S REQUEST FOR PRODUCTION OF DOCUMENTS
AND FOR INSPECTION OF TANGIBLE THINGS**

Plaintiff, CHRISTINE JENNINGS, respectfully submits this Request for Production to the
Defendants, ELECTIONS CANVASSING COMMISSION OF THE STATE OF FLORIDA;
SARASOTA COUNTY CANVASSING BOARD; KATHY DENT, SARASOTA COUNTY
SUPERVISOR OF ELECTIONS; SUE M. COBB, SECRETARY OF STATE OF THE STATE OF

FLORIDA; and DAWN K. ROBERTS, DIRECTOR OF THE DIVISION OF ELECTIONS OF THE STATE OF FLORIDA, pursuant to Rule 1.350 of the Florida Rules of Civil Procedure.

DEFINITIONS

A. "Document" means any document in your custody, possession, or control, including, but not limited to, any printed, written, recorded, tapes, electronic, graphic or other tangible matter from whatever source, however produced or reproduced, whether in draft or otherwise, whether sent or received or neither, including the original, all amendments and addenda and any non-identical copy(ies) (whether different from the original because of notes made on or attached to such copy or otherwise) of any and all writings, correspondence, letters, telegrams, facsimiles, telex communications, cables, e-mail, notes, notations, papers, newsletters, memoranda, inter-office communications, releases, agreements, contracts, books, pamphlets, photographs, studies, minutes of meetings, recordings or other memorials of any type of personal or telephone conversations, meetings or conferences (including, but not limited to, telephone bills, and long distance charge slips), reports, analyses, evaluations, estimates, projections, forecasts, receipts, statements, accounts, books of account, diaries, calendars, desk pads, appointment books, stenographer's notebooks, transcripts, ledgers, registers, worksheets, journals, statistical records, cost sheets, summaries, lists, tabulations, digests, canceled or uncanceled checks or drafts, vouchers, charge slips, invoices, purchase orders, hotel charges, accountant's reports, financial statements, newspapers, periodical or magazine materials, any material underlying, supporting, or used in the preparation of any documents and all tangible things, of any and every kind whatsoever that could be considered a writing.

B. “Thing” means any thing in your custody, possession, or control, including, but not limited to, any voting system machine, voting system technology, voting system software, or voting system hardware.

C. “You,” “Your,” or “Defendants” shall mean the Defendants, as identified above, all of its subdivisions, agents, contractors, officers, directors, employees, attorneys, expert witnesses, accountants, auditors, subsidiaries, related agencies and companies and all other persons and/or entities over whom/which the Defendants has or has attempted to exercise control or authority, or which the Defendants or other persons or entities acting under its authority, control and/or direction, has hired, retained, and/or employed for any purpose relating to the issues in this case.

D. The words “pertain to” or “pertaining to” mean: relates to, refers to, references, revealing, reveals, reflects, regarding, contains, concerns, describes, embodies, mentions, constitutes, in connection, constituting, supports, corroborates, demonstrates, illustrates, proves, evidences, encompasses, shows, refutes, disputes, rebuts, controverts, or contradicts. Each of these words shall be interpreted to include the meaning of each other word or words.

E. Defendants shall mean ELECTIONS CANVASSING COMMISSION OF THE STATE OF FLORIDA; SARASOTA COUNTY CANVASSING BOARD; KATHY DENT, SARASOTA COUNTY SUPERVISOR OF ELECTIONS; SUE M. COBB, SECRETARY OF STATE OF THE STATE OF FLORIDA; and DAWN K. ROBERTS, DIRECTOR OF THE DIVISION OF ELECTIONS OF THE STATE OF FLORIDA.

F. As used herein, the past tense shall include the present tense, and vice versa. The singular includes the plural, and vice versa.

G. As used herein, the words “and” and “or” should be considered both conjunctive and disjunctive; the word “all” means “any and all.”

INSTRUCTIONS

H. Any documents or things to which a claim of privilege is or will be asserted should be identified by author, signatory, description (e.g., letter, memorandum, telex, recording, etc.), title (if any), date, address (if any), general subject matter, present depository and present custodian and a complete statement of the ground for the claim of privilege should be set forth.

I. If it is maintained that any document or thing which is requested has been destroyed, set forth the contents of the document or thing, the date of such destruction, and the name(s) of the person(s) who participated in, authorized, or directed such destruction.

J. If any of the documents or things cannot be produced in full, produce to the extent possible, specifying the reason for the inability to produce the remainder.

K. This request is a continuing one. If after producing documents or allowing inspection of things, you become aware of, generate, or acquire any additional documents or things responsive to this request, you are required to produce those additional documents or things.

L. If any portion of any document or thing called for in this Request is considered privileged or is otherwise not produced, but the document or thing in its entirety is not privileged or otherwise subject to production, the Defendants must include the document or thing in their responses but may omit or delete any portions that are privileged so long as the document or thing clearly shows what

portions have been omitted or deleted and a summary or description of the subject matter of the omitted or deleted portions is provided. In addition, the Defendants must state the grounds upon which each portion of the document or thing is considered privileged, including the specific privilege, statute, or regulation relied upon.

REQUEST FOR PRODUCTION OF DOCUMENTS

1. All “event logs” (or “audit logs”) in digital form (on a recordable compact disc), as produced by the Unity software suite, covering every voter who voted or attempted to vote on an iVotronic voting machine used in early voting or in Election Day voting in Sarasota County in the November 2006 general election.

2. All “ballot-image logs” (or “ballot-image summaries”) in digital form (on a recordable compact disc), as produced by the Unity software suite, covering every voter who voted or attempted to vote on an iVotronic voting machine used in early voting or in Election Day voting in Sarasota County in the November 2006 general election.

3. All documents pertaining to a list of the machines, by serial number, that were used in each precinct and each early-voting station during the November 2006 general election.

4. All documents pertaining to the Electronics Systems & Software, Inc. (ES&S) source code to the iVotronic system as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a)

5. All documents pertaining to the ES&S source code to all elements of the Unity software suite as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a).

6. All documents pertaining to the ES&S source code to the personal electronic ballots (PEBs) as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a).

7. All documents pertaining to the development tools, scripts, “makefiles,” and other software as used in the November 2006 general election in Sarasota County to compile, debug, and test the iVotronic system, the PEBs, and the elements of the Unity software suite.

8. All user manuals, operator manuals, training materials, and other documentation related to the use, operation, or maintenance of any part of the iVotronic system, the Unity software suite or any of its elements, or the PEBs.

9. All documentation necessary to extract and read the “three redundant memories” contained within the iVotronic machines.

10. All documents pertaining to election-definition files and other necessary data (including passwords) to configure an iVotronic for each of the nine ballot styles used in Sarasota County in the November 2006 general election.

11. All digital copies of the ballot-style files for all nine ballot styles.

12. All files loaded onto an iVotronic machine as part of the “ballot programming” process, either for early voting or for Election Day voting.

REQUEST FOR INSPECTION OF TANGIBLE THINGS

13. Plaintiff hereby requests temporary access to eight iVotronic machines that generated particularly high undervote rates in the recent congressional election in Sarasota County, including at least one machine used on Election Day in each of six specified precincts (Precincts 31, 44, 74, 105,

117, and 118) and at least one high-undervote machine used in early voting; the carrying cases for those iVotronic machines, power adaptors, and other apparatus to set up the voting booths; two supervisor personalized electronic ballots ("PEBs"); nine regular PEBs (one configured for each ballot style used in Sarasota County in the recent election); a standard ES&S "Communications Pack" (containing a thermal printer and all the necessary cabling); and one PEB reader for transferring data from a PEB to a standard personal computer.

14. Plaintiff hereby requests permission to physically open and inspect the internal components of one iVotronic machine and one PEB.

15. Plaintiff hereby requests a full copy of all ES&S source code to the iVotronic system as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a); a full copy of all ES&S source code to all elements of the Unity software suite as used in the recent election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a); and a full copy of all ES&S source code to the PEBs as used in the recent election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a).

Respectfully submitted this 20th day of November, 2006 by:


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IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
From the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

Case No.: 2006 CA 2973

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, *et al.*,

Defendants.

**RESPONSE OF ELECTIONS CANVASSING COMMISSION,
SECRETARY OF STATE SUE M. COBB, AND DAWN K. ROBERTS
TO PLAINTIFF'S MOTION TO COMPEL EXPEDITED DISCOVERY**

Defendants Elections Canvassing Commission of the State of Florida (the "Commission"), Sue M. Cobb in her official capacity as Secretary of State of the State of Florida (the "Secretary"), and Dawn K. Roberts, in her official capacity as Director of the Division of Elections of the State of Florida, respond to Plaintiff's Motion to Compel Expedited Discovery, filed November 20, 2006 (the "Motion"). These three defendants will be collectively referred to as the "State Defendants."¹ In opposition to the Motion, the State Defendants respectfully show this Court the following.

¹ Under the election contest statute, the Commission and Buchanan are the only indispensable parties. § 102.168(4), Fla. Stat. (2006). The Secretary and Roberts reserve their right to seek dismissal of claims against them as improper parties.

I. THERE ARE NO CIRCUMSTANCES JUSTIFYING THE UNREASONABLE RESPONSE TIMES REQUESTED BY THE PLAINTIFF.

The Plaintiff initiated this action by filing her complaint approximately two hours after the Commission certified Buchanan as the winner in this congressional race. Plaintiff then filed her Motion, and she sought an immediate hearing. This Court scheduled a hearing for 10:30 a.m. on November 21, 2006—less than twenty-four hours after the Plaintiff filed her Complaint. All this, despite the complete absence of any circumstances justifying emergency discovery undertakings of any kind.

Through her Motion, the Plaintiff asks this Court to grant the Defendants *one day* to respond to extraordinary and comprehensive discovery requests—requests that will take some time to evaluate, coordinate, and respond to. Rather than outline the specific deadlines and circumstances justifying such a dramatic request (there are none), Plaintiff states that the exceptionally short response time is appropriate “in view of the enormous public interests at stake, the pressing need for a prompt resolution of this matter, and the limited nature of the discovery requested.” Motion at 2.

The State Defendants do not dispute that there are public interests at stake and that there is a need for a prompt resolution to this election contest.² But these interests do not justify a discovery deadline one day after this Court’s hearing. The Secretary and her staff have worked diligently to assemble information relating to this disputed election, and they have observed the recounts. They are preparing to comply with any discovery

² The State Defendants certainly do, however, dispute the Plaintiff’s characterization of her discovery requests as “limited.” Indeed, they are comprehensive. They were compiled by experts, involve data-gathering reaching over 1,500 individual voting machines, and will require substantial efforts to satisfy. At any rate, Plaintiff cites no authority suggesting that the limited nature of a discovery request, without more, justifies an expedited response—much less a one-day response.

order entered by the Court, but they should be permitted a reasonable amount of time to respond—an amount of time that would allow them to coordinate with other defendants, craft an appropriate plan of discovery compliance, and collect and review the requested data. One day is not sufficient time to do this.

As legal authority for her request for the expedited response, Plaintiff relies on the contested election statute itself. Motion at 5. She notes that Section 102.168(6) expedites the normal deadline for filing an answer in an election contest. *Id.* Under that statute, an unsuccessful candidate for office has ten days following the election certification to initiate a contest. § 102.168(2), Fla. Stat. (2006). Defendants then have ten days to respond. § 102.168(6), Fla. Stat. (2006). So although the election contest statute provides for “a simple and speedy means of contesting elections,” *Farmer v. Carson*, 148 So. 557, 559 (Fla. 1933), it does not provide for fire drill discovery. Indeed, it merely reduces by half the answer time—the Florida Rules of Civil Procedure would ordinarily allow twenty days instead of ten. Fla. R. Civ. P. 1.140(a). The Rules also ordinarily allow thirty days for a party to respond to discovery requests. *See* Fla. R. Civ. P. 1.350(b). By reducing that time by half, the Defendants would have fifteen days to respond, instead of one.³

More importantly, there is no looming deadline that would require the expedited discovery the Plaintiff seeks. There is no requirement that the election contest be

³ Plaintiff also cites an unpublished order in *Jacobs v. Seminole County Canvassing Board*, 2000 WL 1720698 (Fla. Cir. Ct. 2000) for the proposition that expedited discovery is appropriate in election contests. Motion at 2. The cited order includes no explanation of the circumstances of that case, but the case involved the disputed 2000 Presidential contest, which involved an outside deadline under federal law, *Gore v. Harris*, 772 So. 2d 1243, 1261 (Fla. 2000), *rev'd on other grounds*, *Bush v. Gore*, 531 U.S. 98 (2000), a deadline that is not present in this case. At any rate, the cited order allowed seven days—the Plaintiffs in this case seek a one-day turnaround.

resolved in a matter of days or even weeks. The United States House of Representatives will ultimately decide whether to seat either candidate. Article I, Section 5, of the United States Constitution provides that “[e]ach House shall be the judge of the elections, returns and qualifications of its own members.” Congress also enacted a statute governing the procedures for an election contest before the House. *See* 2 U.S.C. § 381, *et seq.* (Federal Contested Election Act). The procedures in that Act allow for up to 200 days of pleadings, discovery, and briefing, before a contest can be resolved.

II. PLAINTIFF IS NOT ENTITLED TO TAKE POSSESSION OF THE VOTING MACHINES.

Plaintiff’s Motion includes a request for a physical possession of the voting machines. Motion at 7. As the Wallach Declaration states, the Plaintiff’s planned examination would require physically opening the electronic voting machines and the extraction of memory modules. Wallach Dec. ¶ 35. It is apparent from the Motion and the Wallach Declaration that the Plaintiff envisions taking custody of the electronic voting machines, testing them, opening them, removing permanent components, and otherwise manipulating the machines. These activities drift far beyond the Court’s authority to permit “permission to enter upon land or other property for inspection and other purposes.” Motion at 7-8 (quoting Fla. R. Civ. P. 1.280(a)).

Florida Rule of Civil Procedure 1.350 allows parties to request “entry upon designated land or other property in the possession or control of the party upon whom the request is served *for the purpose of inspection and measuring, surveying, photographing, testing, or sampling the property* or any designated object or operation on it within the scope of rule 1.280(b).” *Id.* (emphasis added). Plaintiff seeks to do more than inspect and test the electronic voting equipment; she seeks to *alter it*. The very nature of the

activities the Plaintiff wishes to conduct will alter the machines and leave the voting equipment in a different state than it is now. *See* Affidavit of David Drury, ¶ 5, attached to this Response as Exhibit A.

The Plaintiff cites no authority supporting her broad plans to rearrange, disassemble, and conduct mock elections on the voting equipment. The one case she cites for the proposition that access to computer equipment is generally permissible recognizes that discovery orders granting access to computer systems must be limited.

[T]he order must define parameters of time and scope, and must place sufficient access restrictions to prevent compromising patient confidentiality and to prevent harm to defendant's computer and data bases. One alternative might be for defendant's representative to physically access the computer system in the presence of plaintiff's representative under an agreed-upon set of procedures to test plaintiff's theory that it is possible to retrieve this purged data.

Strasser v. Yalamanchi, 669 So. 2d 1142, 1145 (Fla. 4th DCA 1996). Any order in this case should be likewise limited. It should not permit the Plaintiff to take possession of the machines, and any testing allowed should be under a set of ordered procedures, including perhaps the appointment of a special master. That will ensure the machines are preserved in the current condition in the possession of the accountable elected official, Supervisor Kathy Dent. There also must be in place a technical mechanism to ensure that any data provided to the Plaintiff be provided in a way that ensures a common data baseline.

The machines still contain the voting data from the election. In other words, they are the electronic equivalent of paper ballots. And just as a plaintiff would not be granted unsupervised access to a box of official paper ballots, for example absentee ballots, this Plaintiff should not be granted unsupervised access to a large number of electronic ballots now residing on the voting equipment.

III. THE REQUESTED SOURCE CODE IS NOT SUBJECT TO PRODUCTION.

Finally, the Plaintiff is not entitled to the source code requested. The Plaintiff recognizes that the software belongs to a third party, and she volunteers to enter into a nondisclosure agreement before accessing it. Motion at 8. But she did not include as a defendant the owner of the source code. Nor did she give that owner notice of these proceedings. Until the owner can be heard, the Secretary's disclosure of the proprietary source code would be improper. "A person has a privilege to refuse to disclose, and to prevent other persons from disclosing, a trade secret owned by that person if the allowance of the privilege will not conceal fraud or otherwise work injustice." Fla. Stat. § 90.506 (2006).

Because the State Defendants have had little time to review and analyze the discovery requests, they specifically reserve any and all other objections they may have to the discovery request.

WHEREFORE, the State Defendants respectfully request that this Court deny the Motion, disallow inspection of the voting machines, disallow production of the source code, set a reasonable discovery schedule, and grant the State Defendants such other relief as this Court deems proper.

Respectfully submitted this 21st day of November, 2006.



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CERTIFICATE OF SERVICE

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**IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION**

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
From the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, et al.,

Defendants.

and

ELLEN FEDDER, et al.,

Plaintiffs,

v.

TOM GALLAGHER, et al.,

Defendants.

Case No: 2006 CA 2978

FILED
CIRCUIT CIVIL DIV.
DEC 11 PM 1:36
LEON COUNTY, FLORIDA

Case No: 2006 CA 2996

**CONGRESSMAN-ELECT BUCHANAN'S ANSWER TO
PLAINTIFF JENNINGS' FIRST AMENDED COMPLAINT**

Defendant, Congressman-Elect Vern Buchanan, answers the First Amended Complaint as follows:

1. Admitted that this is an action contesting the certification of Vern Buchanan's election to the United States House of Representatives for Florida's Thirteenth Congressional District and that Mr. Buchanan received 369 more votes than Christine Jennings; otherwise denied.

2. Denied.
3. The first sentence is admitted; otherwise denied.

Common Allegations

4. Admitted as to the purported nature of the action and the accuracy of the quoted statute; denied that the First Amended Complaint states a cause of action based upon the rejection of a number of legal votes sufficient to change or place in doubt the result of the election.

5. Admitted.
6. Admitted.
7. Admitted.
8. Admitted.
9. Admitted.
10. Admitted.
11. Admitted.
12. Admitted.

13. Admitted as to Congressman-elect Buchanan; denied as to Plaintiff's mischaracterization of Section 102.168(4), Florida Statutes, which provides that the successful candidate is an indispensable party.

14. Without knowledge.
 - a. The first sentence is admitted; otherwise, without knowledge.
 - b. Without knowledge.
15. Admitted.
16. Admitted.

17. The election results speak for themselves; otherwise, without knowledge.
18. The election results speak for themselves; however, admitted that the machine recount was ordered; otherwise, without knowledge.
19. The election results and the manual recount results speak for themselves; however, admitted that the manual recount was ordered; otherwise, without knowledge.
20. The election results and the manual recount results speak for themselves; otherwise, however, admitted that the Secretary of State reported an undervote as alleged; otherwise, without knowledge.
21. Denied.
 - a. The certified election returns speak for themselves; denied as to the gratuitous characterizations; without knowledge as to how the purported percentages were calculated.
 - b. The certified election returns speak for themselves; denied as to the gratuitous characterizations; without knowledge as to how the purported percentages were calculated.
 - c. The certified election returns speak for themselves; denied as to the gratuitous characterizations; without knowledge as to how the purported percentages were calculated.
 - d. The certified election returns speak for themselves; denied as to the gratuitous characterizations; without knowledge as to how the purported percentages were calculated.

- e. The certified election returns speak for themselves; denied as to the gratuitous characterizations; without knowledge as to how the purported percentages were calculated.
 - f. The certified election returns speak for themselves; denied as to the gratuitous characterizations; without knowledge as to how the purported percentages were calculated.
22. Without knowledge as to the first two sentences; admitted as to the third sentence; without knowledge as to the fourth and fifth sentences.
23. Denied.
24. Denied.
25. Denied.
26. Without knowledge.
27. Denied as to the first two sentences; admitted that the voter's choice is saved to permanent memory upon the voter's pressing the "vote" button, otherwise, without knowledge as to the third and fourth sentences; denied as to the fifth sentence.
28. Without knowledge.
29. Without knowledge.
30. Without knowledge.
31. Without knowledge.
32. Denied.

Count I

33. Responses to paragraphs 1-32 are incorporated herein.
34. Denied.

35. Denied.

36. Denied.

37. Denied.


Denied that Plaintiff is entitled to any of the relief requested in her Prayer for Relief.

FIRST AFFIRMATIVE DEFENSE

The First Amended Complaint fails to state a cause of action because, as a matter of law, the undervotes recorded by the iVotronic touchscreen voting system at issue demonstrate the clear intent of the voters to undervote, *i.e.*, the voters made a definite choice to not cast a vote for the Congressional District 13 race and as a result such undervotes shall not be counted as legal votes for that office.

WHEREFORE, Congressman-elect Vern Buchanan respectfully requests that the requested relief be denied and the First Amended Complaint be dismissed with prejudice and at Plaintiff's sole cost and expense. Mr. Buchanan further respectfully requests such other and further relief as this Court deems just and proper under the circumstances.

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing *Answer to the First Amended Complaint* has been furnished by U.S. Mail and facsimile this 11th day of December, 2006 to counsel of record on the attached service list.



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IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
From the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, et al.,

Defendants.

and

ELLEN FEDDER, et al.,

Plaintiffs,

v.

TOM GALLAGHER, et al.,

Defendants.

Case No: 2006 CA 2973

06 DEC 11 PM 4:36
CLERK CIRCUIT COURT
LEON COUNTY, FLORIDA
RECEIVED
CIRCUIT CIVIL DIV.

Case No: 2006 CA 2996

CONGRESSMAN-ELECT BUCHANAN'S ANSWER
TO THE FEDDER PLAINTIFFS' COMPLAINT

Defendant, Congressman-elect Vern Buchanan, answers Plaintiffs' Complaint to Contest

Election as follows:

1. The first two sentences are admitted; otherwise, denied.
2. The nature of the action is admitted; otherwise, denied.
3. Admitted that some Sarasota County voters voted on paper ballots; otherwise, denied.

4. Without knowledge.
5. Admitted.
6. Admitted.
7. Admitted.
8. The first sentence is admitted; otherwise, without knowledge.
9. The election returns speak for themselves; denied as to the last sentence; otherwise, without knowledge.
10. The election returns speak for themselves; denied as to the last sentence; otherwise, without knowledge.

Jurisdiction and Venue

11. The nature of the action is acknowledged.
12. Admitted.

Common Allegations

13. Admitted.
14. The election returns speak for themselves; admitted as to the last sentence; otherwise, without knowledge.
15. The election returns speak for themselves; otherwise, without knowledge.
16. The election returns speak for themselves; otherwise, without knowledge.
17. The election returns speak for themselves; admitted that voters in DeSoto, Hardee, and Manatee counties used optical scan paper ballots; otherwise, without knowledge.
18. Without knowledge.
19. Without knowledge.
20. Without knowledge.

- 21. Without knowledge.
- 22. Without knowledge.
- 23. Without knowledge.
- 24. Without knowledge.
- 25. Without knowledge.
- 26. Without knowledge.
- 27. Without knowledge.
- 28. Without knowledge.
- 29. Without knowledge.

Count I, Section 102.168(3)(a)
(Sarasota County Supervisor of Elections Kathy Dent)

- 30. Responses to paragraphs 1-29 are incorporated herein.
- 31. Section 102.141(8)(a)(1), Florida Statutes, speaks for itself; otherwise, without knowledge.
- 32. Section 102.141(8)(a)(2), Florida Statutes, speaks for itself; otherwise, without knowledge.
- 33. Without knowledge.
- 34. Without knowledge.
- 35. Without knowledge.
- 36. Denied.

Count II, Section 102.168(3)(a)
(Secretary of State Sue M. Cobb)

- 37. Responses to paragraphs 1-36 are incorporated.
- 38. Admitted.

39. Section 101.5606, Florida Statutes, speaks for itself; otherwise, without knowledge.

40. Admitted that the ES&S iVotronic voting machine, firmware, software, and election management software were certified for use in Florida elections by the Secretary of State; otherwise, without knowledge.

41. Denied.

42. Denied.

Count III, Section 102.168(3)(c)
(Sarasota County Canvassing Board)

43. Responses to paragraphs 1-42 are incorporated.

44. Admitted.

45. Denied.

Count IV, Section 102.168(3)(c)
(Florida Elections Canvassing Commission)

46. Responses to paragraphs 1-45 are incorporated.

47. Admitted.

48. Denied.

Denied that Plaintiffs are entitled to any of the relief requested in their Prayer for Relief.

FIRST AFFIRMATIVE DEFENSE


The First Amended Complaint fails to state a cause of action because, as a matter of law, the undervotes recorded by the iVotronic touchscreen voting system at issue demonstrate the clear intent of the voters to undervote, *i.e.*, the voters made a definite choice to not cast a vote for the Congressional District 13 race and as a result such undervotes shall not be counted as legal votes for that office.

SECOND AFFIRMATIVE DEFENSE

To the extent Plaintiffs seek to challenge the election result based upon ballot design, such a claim is barred by the doctrine of waiver and estoppel because the form of ballot used by Sarasota County on the ES&S iVotronic touchscreen voting system in the 2006 General Election was implemented pursuant to law and made effective in July 2004 and Plaintiffs failed to make timely challenge to same.

WHEREFORE, Congressman-elect Vern Buchanan respectfully requests that the requested relief be denied and the Complaint be dismissed with prejudice and at Plaintiffs' sole cost and expense. Mr. Buchanan further respectfully requests such other and further relief as this Court deems just and proper under the circumstances.

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CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
From the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

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THE STATE OF FLORIDA, et al.,

Defendants.

and

ELLEN FEDDER, et al.,

Plaintiffs,

v.

Case No: 2006 CA 2996

TOM GALLAGHER, et al.,

Defendants.

**CONGRESSMAN-ELECT VERN BUCHANAN'S
POST HEARING BRIEF CONCERNING REASONABLE NECESSITY**

INTRODUCTION

The instant discovery motions seeking to compel disclosure of trade secrets should be denied because plaintiffs cannot establish reasonable necessity for the following reasons:

- (i) plaintiffs offer no evidentiary support for establishing reasonable necessity; rather, they offer nothing more than the bare assertion that they "need" the source code to "rule out" the existence of a software bug; this construct misdirects the legal issue to be resolved here and is based solely upon a flawed statistical analysis that assumes the existence of the malfunction it purports to evidence;

(ii) objective, authoritative and empirical testing by the State demonstrates that the machines at issue performed with 100% accuracy in recording the vote selections as indicated on the review screens; and

(iii) there exists alternative and less intrusive means for obtaining discovery in aid of plaintiffs' claim that a bug-induced malfunction caused the rejection of a number of legal votes sufficient to change or place in doubt the result of the election.

ARGUMENT

I. Pre-supposition and a Bare Claim of Need Are Insufficient to Establish Reasonable Necessity.

Ms. Jennings' claim of machine malfunction is based upon nothing more than speculation and the circular reasoning of her experts. Professors Stewart and Wallach concede that there is no direct evidence of machine malfunction; rather, their opinions rest upon statistical speculation based upon the existence of "excess undervotes." Professor Stewart's theory rests upon a critical, fundamental flaw in that his definition of "excess undervotes" assumes the existence of some "peculiarity" - *i.e.*, machine malfunction:

Q: And the excess undervote you defined as the amount of undervotes above the normal; correct?

A: Yes, sir.

Q: So your definition presupposes some malfunction or peculiar happening; correct?

A: **It presupposes some peculiarity associated with an election.**

Tab 1, 12/19/06 Tr. 95:14-20 (emphasis added). Professor Stewart confirmed that his analysis provides no evidence of any physical malfunction. Tab 1, 12/19/06 Tr. 82:2-19.¹ Nor can he provide evidence of any of the other hypotheses proffered as a potential cause of the excess undervotes; rather, he merely supplies statistics “about the behavior of voters using particular types of machines.” Tab 1, 12/19/06 Tr. 80:18-81:11.

Professor Stewart’s analysis fails in several other critical respects:

- Although Professor Stewart believes that Ms. Jennings would win if it can be shown that 10 percent of the excess undervotes were caused by machine malfunction, he cannot determine which, if any, of the five proffered hypotheses may have caused the excess undervotes, nor is he able to attribute any statistical probability to the likelihood that any one hypothesis might be responsible for causing the excess undervotes. See Tab 1, 12/19/06 Tr. 105:3-106:6;²

¹ Professor Stewart attempted to maneuver around this by couching the text of his report in terms of the excess undervotes being caused by “the use of electronic voting machines” rather than by “electronic voting machine malfunction” or “software bug.” See Tab 1, 12/19/06 Tr. 75:6-10, 77:23-78:1 (emphasis added).

² The following exchange is telling:

- Q: Can you tell the court what percentage of the excess undervote is attributable to the voter abstention or turnoff hypotheses ...?
- A: **I've done no work that's attempted to identify that number.**
- Q: Are you able to tell the court the number of excess undervotes attributable to the [flawed] ballot design theory ...?
- A: **I've done no research to try to parse out the different contributing factors to the excess undervote.**
- Q: . . . [C]an you tell the court what percentage of excess undervotes is attributable to the malicious code hypothesis ...?
- A: **I have no data about that.**
- Q: And can you tell the court ... what percentage of the excess undervotes is attributable to this software bug that Dr. Wallach references in his report?
- A: **I have no evidence about that.**
- Q: Is there any way that you can tell the court what percentages are attributable to any of these hypotheses?

- His analysis cannot determine the intent of any voter, but, rather, “is an attempt to estimate ... how that pool of voters **would have** cast their ballots in this particular case.” Tab 1, 12/19/06 Tr. 103:23-104:6 (emphasis added);
- He cannot prove the actual number of excess undervotes in the Congressional District 13 race, *see* Tab 1, 12/19/06 Tr. 100:4-7.

The mere assumption of malfunction is not evidence of malfunction and cannot serve as the evidentiary basis for reasonable necessity.

A party seeking to pierce the statutory privilege and compel production of trade secrets must establish reasonable necessity. *See, e.g., Rare Coin-It, Inc. v. I.J.E., Inc.*, 625 So.2d 1277, (Fla. 3d DCA 1993) (quashing discovery order where there was no evidence presented of reasonable necessity of disclosure of trade secrets); *Scientific Games, Inc. v. Dittler Brothers, Inc.*, 586 So.2d 1128, 1131-32 (Fla. 1st DCA 1991) (quashing discovery order where requesting party failed to establish reasonable necessity); *Goodyear Tire & Rubber Co. v. Cooley*, 359 So.2d 1200, (Fla. 1st DCA 1978) (quashing discovery order that required access to trade secrets because the “evidence [does not] reveal the necessity for such access and inspection”). Otherwise, anyone filing any action that remotely concerns a trade secret could automatically gain access on the grounds of “reasonable necessity.”

The mere assertion of need, absent an evidentiary showing, is insufficient to override the statutory privilege against disclosure of trade secrets. *Beck v. Dumas*, 709 So.2d 601, 603 (Fla. 5th DCA 1998) (rejecting argument of counsel that he “needed” the trade secret materials and quashing order compelling production). The only proffered basis for gaining access to the trade secrets here is Professor Wallach’s bare assertion that he can’t rule out the existence of a bug

A: **I know of, off the top of my head, no way in which you could test those, but I am not -- I am not an expert in how those bugs would manifest themselves in the voting record.**

Tab 1, 12/19/06 Tr. 105:3-106:6 (emphasis added).

without the source code. *See, e.g.*, Tab 2, 12/20/06 Tr. 13:7-10.³ The claim that he “can’t rule out the existence of a bug without the source code” is a red herring that assumes malfunction and requires proof of a negative. In Professor Wallach’s universe, the inability to prove the absence of a bug means, *a fortiori*, that there is a malfunction -- regardless of whether the machines actually manifest the alleged malfunction in the real world. The assertion that a software bug’s existence can never be ruled out is far different than proving than a machine malfunctioned.

Contrary to Professor Wallach’s construct, plaintiffs’ do not bear the burden of proving or disproving the existence of a software bug; rather, they bear the burden of proving that machine malfunction caused the rejection of a number of legal votes for Ms. Jennings sufficient to change or place in doubt the result of the election.⁴ This legally dispositive issue can be fully litigated and properly resolved without resort to disclosure of the trade secret source code. *See e.g., Scientific Games, Inc. v. Dittler Brothers, Inc.*, 586 So.2d 1128, 1131-32 (Fla. 1st DCA 1991) (quashing discovery order where the parties may litigate and resolve the dispositive issue without resort to the disclosure of trade secrets); *see also Rare Coin-It, Inc. v. I.J.E., Inc.*, 625 So.2d 1277, (Fla. 3d DCA 1993) (quashing discovery order where there was no evidence presented of reasonable necessity of disclosure of trade secrets in order to prove “the ultimate issue in this case”).

³ Professor Wallach’s belief that there “might be a problem” is based upon “excess undervotes” described in Professor Stewart’s report and testimony. *See* Tab 2, 12/20/2-3.

⁴ On this point the record evidence is clear and uncontroverted: neither statistical expert can determine the number of votes cast for Ms. Jennings that were not counted, if any. *See* Tab 1, 12/19/06 Tr. 100:4-7 (“Q: You can’t prove the actual number of excess votes in this case, can you? A [Professor Stewart]: I cannot prove that is was a particular number, no sir.”) (emphasis added); Tab 3, 12/20/06 Tr. 204:12-21 (“Q: Can your analysis, as you’ve described it today, tell us the number of votes that were cast for Christine Jennings that were not counted, if any, in the 13th congressional district race? . . . A [Professor Herron]: I think it follows from my report that **that number is zero.**”) (emphasis added).

Professor Wallach's claimed need for access to the source code is betrayed by his own testimony. Wallach acknowledges that he is able to "demonstrate software bugs in the operation of systems...." Tab 2, 12/20/06 Tr. 42:17-19. He further admits that parallel "testing can demonstrate beyond a doubt that a problem exists." Tab 2, 12/20/06 Tr. 31:22-23 (emphasis added); *see also id.*, 11:20-22 ("a broad truism is that [parallel] testing can never identify the absence of bugs; it can only show the presence of bugs.") (emphasis added). In fact, he has never "seen a bug cause a voting machine to create undervotes for a specific candidate during an election but did not show up at all in parallel testing." Tab 2, 12/20/06 Tr. 71: 6-10. Professor Wallach goes on to describe his analytical process as determining the presence of a bug through parallel testing with resort to review of the source code to explain *why* there was a malfunction. Tab 2, 12/20/06 Tr. 149:24-150:2 ("through testing and examination of machines, I might observe something unusual, and then I might go back and look at the software to see if I can find an explanation for why.").⁵ Even if a bug were found in the source code, Professor Wallach must demonstrate its manifestation in the machine's operation in order to validate his theory; absent such empirical demonstration, any claim that machine malfunction caused the rejection of a number of legal votes sufficient to change or place in doubt the result of the election remains a theoretical notion and, necessarily, fails the crucial element of causation.⁶ In fact, objective,

⁵ The relevant question is in not *why* the bug caused the malfunction but *whether* the bug caused the malfunction. To have any probative value in this contest plaintiffs would have to demonstrate the manifestation of a bug that caused a failure to count votes cast for Christine Jennings at a rate sufficient to change or place in doubt the result of the election.

⁶ *See, e.g., Gore v. Harris*, 772 So.2d 1243, 1253 (Fla.) ("Logic dictates that to bring a challenge based upon the rejection of a specific number of legal votes under section 102.168(3)(c), the contestant **must establish the 'number of legal votes** which the county canvassing board failed to count.'"), *rev'd on other grounds*, 531 U.S. 98 (2000).

authoritative and empirical testing by the State has demonstrated that the touchscreen machines record voters' selections as reflected on the summary screens with 100% accuracy.

**II. The State's Parallel Testing Demonstrates the
Absence of Reasonable Necessity.**

The Secretary of State, as Florida's chief election officer and pursuant to Section 101.5607(1)(c), directed the Division of Elections staff to conduct an audit of Sarasota County's voting system and attendant procedures with regard to the United States Congressional District 13 race. The audit was conducted by the Bureau of Voting Systems Certification, which was created by the Legislature to "provide technical support to the supervisors of elections and which is responsible for voting system standards and certification." § 101.017, Fla. Stat. (2006). This audit consists of a "Parallel Test" of the voting machines used by Sarasota County in the general election and a separate source code review.⁷ The Parallel Test has been completed and the State has issued its report, which was received into evidence as ES&S's Exhibit 7 ("State Parallel Test Report," a true and correct copy of which is attached at Tab 4). The Parallel Test "focused on the iVotronic touchscreen's **ability to accurately record a voter's selections as presented to the voter on the touchscreen's ballot review pages.**" Tab 4, State Parallel Test Report, p. 2 (emphasis added).⁸ The testing "also examined various complaints regarding a voter's ability or difficulty in making his or her vote selections." *Id.* As noted by the State, "[t]he intent of this

⁷ Counsel understands that the State has retained or is retaining a team of independent experts to conduct the source code review phase of the audit.

⁸ Such a focus is not only appropriate, but necessary, for two reasons: (i) "[i]t is the review screens' list of voter selections that the iVotronic records when the voter presses the 'VOTE' button to cast the ballot[.]" Tab 4, State Parallel Test Report, p. 7; and (ii) plaintiffs' claims "that the voting equipment may not have correctly captures the voters' selection." *Id.*, p. 3; *see also* Jennings Amended Complaint, ¶ 2 (claiming the machines "were systematically failing to record votes cast for the candidates in the Thirteenth District congressional race -- particularly votes cast for Plaintiff Christine Jennings.").

parallel activity is to **ascertain the accuracy and reliability of the deployed voting devices with consideration given to ballot style, layout, coding, demographics, and operation.**" *Id.*, p. 3. The Parallel Test was based upon actual voting behavior and data. *See Id.*, pp. 3-9 (detailing parameters, procedures, and scripting, etc.). The tests were performed on machines with the highest undervote totals from the precincts that experienced the highest levels of undervotes and selected by the parties. *Id.* p. 3. The State defined the pool for machine selection as those with highest undervote totals in order to "enhance the probability of revealing the undervote anomaly should it exist." *Id.*

The State's tests "were successful in demonstrating 100% accuracy in recording the vote selections as indicated on the review screens. There were no unresolved anomalies. In addition, attempts to replicate the published reports concerning voter difficulties in making or changing their vote selections did not materialize during this test." Tab 4, State Parallel Test Report, p. 8. The State's analysis concludes:

This series of parallel tests demonstrated that the iVotronic touchscreens did not exhibit pervasive malfunctioning. There are no indications of machine bias or otherwise voting machine faults that would yield rejected legal votes. The claims made that vote were lost due to touchscreen malfunction are not supported by the results of this test. . . .

In summary, **there is no evidence to support the position that the iVotronic touchscreens caused votes to be lost.**

Tab 4, Parallel Test Report, pp. 8-9 (emphasis added).

Plaintiffs offered no evidence to rebut the State's conclusion "that the iVotronic touchscreens accurately captures the voter's selection as presented to the voter on the review screens." *See* Tab. 4, Parallel Test Summary Report (ES&S Ex. 7), p. 2. To the contrary, Professor Wallach admits: "I **don't doubt its accuracy.**" Tab 2, 12/20/06 Tr. 68:24-69:7 (emphasis added). Instead, he quibbles with its "completeness." *Id.* On redirect, Professor

Wallach agreed to a laundry list of items presented by counsel which, if included, would have made the parallel testing “more complete.” *See* Tab 2, 12/20/06 Tr. 72:4-75:20 (noting factors such as demographic selection of test voters, the number of machines tested and the rapidity or steadiness of finger touches). None of these address the ultimate question of whether the iVotronic machines accurately recorded the voter’s selection as presented to -- and verified by -- the voter on the review screens.⁹ In the end, Professor Wallach concluded that the State’s decision to display the touchscreens vertically rather than horizontally “raises the need to perform new tests that would be done closer to how the machines were used on election day.” Tab 2, 12/20/06 Tr. 74:8-18.¹⁰

III. A Reasonable, Less Intrusive Alternatives Are Available.

Courts cannot compel the disclosure of trade secrets absent evidence of reasonable necessity, *see* cases cited above. Indeed, the production of confidential information will not be compelled where there is a less intrusive means of obtaining discovery. *See, e.g., Delta Health Group, Inc. v. Williams*, 780 So.2d 337 (Fla. 5th DCA 2001) (balancing need for confidential information against right of privacy).

⁹ *See, e.g.,* Tab 4, Parallel Test Report, pp. 8-9:

. . . [T]he process of selecting one’s choices is not a measure of the of the voting device’s accuracy. **Accuracy is relevant to the information presented to the voter on the review screens and ultimately captured as a ballot cast upon a positive action by the voter after that voter has advanced to al the review screens and after making any desired changes to the vote selections.** The sample size for these tests, a total of ten test units, is more than adequate to identify any machine malfunctions, faulty machines, machine bias or irregularities that could have contributed to the observed undervotes in this race. [emphasis added]

¹⁰ The State used the vertical display to allow “the public to witness the test team’s interaction with the touchscreens” and to facilitate videotaping as well as the observation by representatives of Ms. Jennings and Congressman-elect Buchanan. Tab 3, State Parallel Test Report, p. 6.

Congressman-elect Buchanan submits that the State, pursuant to its statutory powers, is the most appropriate auditor of the source code; and thus, like the parallel testing, the State should be allowed to conclude its work in that regard. Maintaining the trade secret privilege is particularly appropriate here because the only direct, record evidence concerning the performance of the voting machines demonstrates that they performed with 100% accuracy in recording the vote selections as indicated on the review screens.

If, however, the Court agrees with plaintiffs' claim that the State's parallel testing is "incomplete," then it is not unreasonable to give them the opportunity to implement their own (already existing) parallel testing program -- assuming certain basic control procedures are in place, *e.g.*, they provide voting scripts to all the parties in advance, allow the parties to monitor the testing, videotape the testing for subsequent review and the like. In this way, ES&S's acknowledged proprietary rights and statutory protections are left in tact while plaintiffs are afforded a less intrusive means of taking discovery in aid of their claim of machine malfunction. If plaintiffs could demonstrate through parallel testing machine malfunction to a degree approximating the undervote experienced in the general election, then it may not be necessary to review the source code at all. Alternatively, if parallel testing revealed malfunction to a lesser degree, such a showing might demonstrate evidence in support of a finding of reasonable necessity to obtain the source code.

CONCLUSION

For all of the foregoing reasons, Christine Jennings' motion should be denied in its entirety. In the alternative, it is respectfully suggested that Ms. Jennings be allowed to first engage in parallel testing of her choosing (subject only to advance notice of the procedures, access to the exercises for monitoring and videotaping) in order to adduce evidence of machine malfunction in support of a claim of reasonable necessity for access to ES&S's proprietary trade secret source code.

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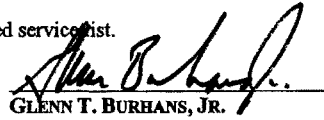
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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing *Post-Hearing Brief Concerning Reasonable Necessity* has been furnished by U.S. Mail and e-mail this 22nd day of December, 2006 to counsel of record on the attached service list.


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IN THE CIRCUIT COURT OF THE
SECOND JUDICIAL CIRCUIT, IN AND
FOR LEON COUNTY, FLORIDA,

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs

CASE NO. 2006-CA-2973

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA; SARASOTA
COUNTY CANVASSING BOARD; KATHY
DENT, as Sarasota County Supervisor of
Elections; SUE M. COBB, as Secretary of State
of the State of Florida; DAWN K. ROBERTS,
as Director of the Division of Elections of the
State of Florida; VERN BUCHANAN, as
nominee of the Republican Party for
Representative in Congress from the State of
Florida's Thirteenth Congressional District;
and ELECTION SYSTEMS & SOFTWARE, INC.,

Defendants.

ELLEN FEDDER, LANCE JONES, ERNEST LASCHE,
a/k/a MIKE LASCHE, BARBARA KLEIN, LOIS
HARMES, JOHN MINDER, DOVIE MURRAY,
JOHN McBRIDE, SUSAN GAAR, GARY LAMER
and CHARLES CLIFTON,

CASE NO. 2006-CA-2996

Plaintiffs,

vs

TOM GALLAGHER, Chief Financial Officer, State of
Florida, GOVERNOR JEB BUSH, and State Senator
DAN WEBSTER, as members of and as the
FLORIDA ELECTIONS CANVASSING COMMISSION;
and SUE M. COBB, as Secretary of State, State of Florida;
et al.,

Defendants.

ORDER ON MOTIONS

This cause came on for hearing on the Motions To Compel filed by Plaintiff, Christine Jennings, and Plaintiffs, Ellen Fedder, Lance Jones, Ernest Lasche, a/k/a Mike Lasche, Barbara Klein, Lois Harnes, John Minder, Dovie Murray, John McBride, Susan Gaar, Gary Lamer, and Charles Clifton, and the Motion For Entry of a Protective Order filed by Plaintiff, Christine Jennings. The Court having considered the evidence presented, the record, argument of counsel, and being otherwise fully advised finds as follows:

- A. All parties agree for the purposes of the motions that the Source Code and Proprietary Technology associated therewith constitutes a trade secret.
- B. The sole issue for determination is whether or not Plaintiffs can demonstrate a reasonable necessity to gain access to the trade secret.
- C. Plaintiffs allege that there was some 18,412 undervotes in the race for The United States House of Representatives in Florida's Thirteenth Congressional District in Sarasota County, or 12.9% of the votes cast in said county, and that such a large number

demonstrates a malfunctioning of the iVotronic system which rejected thousands of legal votes.

D. The machines now challenged were tested as required by law prior to the early voting and election day voting and were found to be working properly.

E. Because the election was a close one and due to Plaintiffs' allegations an audit was conducted on the voting system to verify its accuracy.

F. Two parallel tests were conducted on the subject screen systems and representatives of both Plaintiffs and Defendants were present. The test results revealed 100% accuracy of the equipment in reporting the vote selections.

G. Plaintiffs have presented no evidence to demonstrate that the parallel testing was flawed and/or the results not valid.

H. The testimony of Plaintiffs' experts was nothing more than conjecture and not supported by credible evidence.

I. For this Court to grant Plaintiffs' motions would require this Court to find that it is reasonably necessary for the Plaintiffs to have access to the trade secrets of Defendant, Election Systems & Software, Inc., based on nothing more than speculation and conjecture, and would result in destroying or at least gutting the protections afforded those who own the trade secrets.


Accordingly, it is

ORDERED AND ADJUDGED as follows:

1. The Motion To Compel filed by Plaintiff, Christine Jennings, is Denied.
2. The Motion To Compel filed by Plaintiffs, Ellen Fedder, Lance Jones, Ernest Lasche, a/k/a Mike Lasche, Barbra Klein, Lois Harnes, John Minder, Dovie Murray, John McBride, Susan Gaar, Gary Lamer, and Charles Clifton, is Denied.
3. The Motion For Entry of a Protective Order filed by Plaintiff, Christine Jennings, is moot, and thus Denied.

DONE AND ORDERED in Chambers at Tallahassee, Leon County, Florida, this

29th day of December, 2006.


 WILLIAM L. GARY
 Circuit Judge

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IN THE DISTRICT COURT OF APPEAL
FIRST DISTRICT OF FLORIDA
CASE NO. _____
LT NO. 2006 CA 2973

CHRISTINE JENNINGS,

Petitioner,

v.

ELECTIONS CANVASSING COMMISSION OF THE STATE OF FLORIDA;
SARASOTA COUNTY CANVASSING BOARD;
KATHY DENT, as SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE STATE OF FLORIDA;
DAWN K. ROBERTS, as DIRECTOR OF THE DIVISION OF ELECTIONS
OF THE STATE OF FLORIDA;
VERN BUCHANAN; and
ELECTION SYSTEMS & SOFTWARE, INC.,

Respondents.

EMERGENCY PETITION FOR A WRIT OF CERTIORARI

On Petition for a Writ of Certiorari to the Circuit Court
of the Second Judicial Circuit, in and for Leon County
Honorable William L. Gary

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INTRODUCTION

This is a rare election-contest case because it involves a race that wasn't even close. According to experts for both sides in this case, about 3,000 more voters in Florida's Thirteenth District intended to cast their ballots for congressional candidate Christine Jennings than for her opponent, Vern Buchanan. But when all the votes were tallied, the official state certification showed Buchanan with a 369-vote winning margin. And it also showed 18,000 "undervotes" — 18,000 ballots with *no* vote for *either* congressional candidate — in Sarasota County, the epicenter of what had been one of the most hotly contested, high-profile U.S. House races in Florida's history. Experts for both sides also agree that these undervotes were *unintended*, the unfortunate consequence of something that went very wrong with Sarasota County's iVotronic electronic touch-screen voting system.

But there, the litigants and their respective experts part company. Jennings, the plaintiff below, contends that the electronic voting machines malfunctioned. Buchanan, one of the defendants, claims that it was the voters who malfunctioned. Jennings alleges that votes legally cast for one candidate or the other were rejected by the machines and misrecorded as undervotes, probably due to a software "bug" not unlike the programming glitches people routinely encounter on their home or office computers. Buchanan alleges that voters, particularly Sarasota's senior

citizens, never actually cast their intended congressional votes, as they simply overlooked Jennings's and Buchanan's names on the electronic touch-screens, and then overlooked the race again when they got to the summary screen at the end of the ballot, and then missed the warning, in bright red letters, saying "No Selection Made."

To prove her case, Jennings moved to compel state and county election officials to produce components of Sarasota's iVotronic system, so that her own computer-science experts could examine and test them. Defendants, exhibiting a disturbing lack of confidence in their own election technology and an even more disturbing lack of concern for the public's trust in our democratic processes, have thrown up the "trade-secret privilege," claiming that Jennings's discovery requests represent a grave threat to the reputation and business interests of the iVotronic system's manufacturer, Election Systems and Software, Inc. (ES&S), a privately held corporation.

Late last Friday, the Circuit Court of the Second Judicial Circuit ruled in favor of ES&S and against a full and fair evaluation of what went wrong in this election. In so ruling, the trial court committed two clear legal errors. *First*, the court applied the wrong legal test when it held that Jennings had not shown a "reasonable necessity" for access to ES&S's trade secrets. The court apparently confused the "reasonable necessity" standard applicable to trade-secret disputes in

discovery with the “reasonable likelihood of success on the merits” standard applicable to motions for temporary injunctions. “Reasonable necessity” must be measured in light of the movant’s need for the material, not her likelihood of ultimately succeeding on her theory of the case — otherwise the court is deciding the merits of the case before discovery can even get underway. Given that a protective order would fully safeguard ES&S’s interests, there was no conceivable reason for denying this discovery. ***Second***, the court rested its ruling on a report — which was blatantly inadmissible as hearsay, as its author never took the stand — from the State Defendants’ staff, who purported to have tested a handful of Sarasota County’s iVotronic machines and found them “100% accurate.” But as Jennings’s computer-science expert testified at length, the tests themselves were thoroughly unreliable, as they failed to replicate Election Day conditions in at least a half-dozen key respects.

In the wake of the trial court’s erroneous discovery ruling, Defendants, pleading ***voter confusion*** as the explanation for the thousands of unintended undervotes, will continue to have all the access they need to Sarasota County’s allegedly confused voters. Plaintiff Jennings, pleading ***machine malfunction*** as the explanation, will now be denied access to Sarasota County’s allegedly malfunctioning iVotronic machines. Without that access, her ability to develop the facts and present her case will be crippled. And the voters of Florida’s Thirteenth

District will be left with no explanation for what actually happened to 18,000 of their ballots, and no explanation for why they are represented in Congress by the candidate who was their second choice.

Because this is an election-contest case for a public office whose term begins this week and will end in just 24 months, the harm done by the trial court's order cannot be corrected on appeal from the final judgment. Jennings therefore respectfully asks this Court to rule on this Petition on an expedited basis, to quash the trial court's order, and to empower *all* parties to this litigation to get to the bottom of what went wrong in Sarasota County on Election Day 2006.

BASIS FOR INVOKING JURISDICTION

Article V, Section 4(b)(3) of the Florida Constitution grants the District Courts of Appeal jurisdiction to issue writs of certiorari. *See also* FLA. R. APP. P. 9.030(b)(2)(A). The order to be reviewed here was issued on Friday afternoon, December 29, 2006. A 806. This Petition is timely under Rule 9.100(c)(1).

STATEMENT OF FACTS

I. The Statistically Anomalous Undervote Rate in Florida's Thirteenth Congressional District Undermined the Election's Legitimacy.

On November 7, 2006 ("Election Day"), the State of Florida conducted an election for numerous offices, including Representatives in Congress. Appendix at 211 [hereinafter "A"]. Early voting and voting by absentee ballot were permitted for this election (as for all elections in Florida). *Id.* Both for early voting (from

October 23 to November 5) and for Election Day voting (on November 7), Sarasota County used an electronic voting system, called the “iVotronic” touch-screen voting system, manufactured by ES&S, a privately held corporation. *Id.* Sarasota County does not use the iVotronic electronic voting system (or any other electronic voting machines) for absentee balloting. *Id.* For absentee balloting, Sarasota County uses paper ballots read by optical-scanning equipment. *Id.*

The vote tallies for electronic voting and for paper voting were wildly divergent. Nearly 15% of the Sarasota County *electronic* ballots — roughly 18,000 ballots — were reported as “undervotes,” meaning that no vote was recorded for either the Republican candidate, Respondent Vern Buchanan, or the Democratic candidate, Petitioner Christine Jennings. *Id.* at 212. By contrast with the nearly 15% undervote rate for Sarasota County’s *electronic* ballots, only 2.5% of the Sarasota County *paper* ballots in the very same congressional election were recorded as undervotes. *Id.* at 213. Furthermore, in the other counties partly or wholly contained in Florida’s Thirteenth District, the undervote rate in the same congressional election also was only 2.5% — one-sixth the undervote percentage recorded for electronic ballots in Sarasota County. *Id.* And in 2002, in the last midterm congressional election, the undervote rate for Sarasota County’s electronic ballots was only 2.2% — one-seventh the rate recorded in the same county, for the same office, in 2006. *Id.*

II. Contemporaneous Evidence Pointed to Pervasive Malfunctioning of Sarasota County's iVotronic System.

Even before these aberrational returns started coming in on Election Night, eyewitness accounts from hundreds of Sarasota County voters and contemporaneous records from the Sarasota County Supervisor of Elections' office documented that the iVotronic paperless electronic voting machines had systematically failed to record votes cast for candidates in the Thirteenth District congressional race — particularly votes cast for Jennings. A 215-25. For example, one Sarasota County voter filed an affidavit stating:

I went through the ballot making my selections on the iVotronics touch-screen voting machine and took my time making sure that I voted in every race. I am certain that I cast a vote for Christine Jennings. When I reviewed the ballot at the end of the voting process, I noted that the race for the 13th congressional district . . . indicated that I had made no selection. . . . I have more than 15 years experience in selling computer systems, five of those years are in selling touch-screen systems. Based on my experience, I believe there was a software bug in the voting machine software causing the software not to register the touch.

Id. at 216.

Similarly, one poll watcher witnessed precinct poll workers “instruct[ing] voters to hold their finger on the touch-screen for more time, rather than just touch [the] screen to get the vote to register. I heard several voters tell poll workers the iVotronic touch-screen voting machine was not recording their vote.” *Id.* at 224.

And a contemporaneous “Incident Report Form” from the Sarasota County Supervisor of Elections’ office noted that a “voter voted on screen — didn’t show up on review . . . asked poll worker for help . . . [c]ancelled ballot and moved to another machine,” and went on to observe “more than one [voter] with trouble on machine.” *Id.* Another incident report observed that “[e]very other voter is complaining about the Christine Jennings contest not coming up.” *Id.* at 224-25. And a report by a Sarasota County technical-support person indicated that a particular iVotronic machine “will not register votes no matter how hard you press screen.” *Id.* at 225. There literally were hundreds of such reports from voters, poll watchers, election officials, and technical-support personnel. *Id.* at 215-25; *see id.* at 593 (citing “evidence of ballots sometimes not appearing on the screen”); *id.* at 598-99 (citing evidence of “[v]isual problems on the [touch-screen] display”). Indeed, even Mr. Buchanan’s wife reported difficulty voting for her husband, apparently pressing the “Vote” button three times before her vote would register.

III. Jennings Filed This Election-Contest Case, but the Trial Court Denied Her Motion for Expedited Discovery of the iVotronic System.

On November 20, 2006, Christine Jennings filed a complaint under Florida’s election-contest statute, Section 102.168, Florida Statutes, in the Circuit Court of the Second Judicial Circuit, in Leon County, Florida. A 1. The case was later consolidated with a second election-contest action brought by a bipartisan group of eleven individual voters. *Id.* at 204. Defendants in these consolidated cases

included various state and county election officials, as well as congressional candidate Vern Buchanan. *Id.*

Immediately upon filing her complaint, Jennings moved to compel expedited discovery of the hardware, software, and source code for Sarasota County's iVotronic system, which had caused thousands of legal votes cast for her to be incorrectly rejected and recorded as undervotes. *Id.* at 122.¹ (The term "source code" refers to a series of statements or instructions written in a human-readable computer programming language; when converted into machine-readable language, these instructions tell the computer how to operate in myriad situations. *Id.* at 525, 559.)

At the November 21 hearing on Jennings's motion, the State Defendants informed the trial court that the Department of State's Bureau of Voting Systems Certification would conduct and videotape a "parallel test" on five of Sarasota County's 1,500 iVotronic machines. *Id.* at 159. The test would attempt to simulate Election Day conditions and then determine whether the machines

¹ In particular, Jennings sought access to eight iVotronic machines that generated particularly high undervote rates and related iVotronic equipment, as well as the ES&S source code to the iVotronic system, to all elements of ES&S's Unity software suite, and to ES&S's personal electronic ballots (PEBs). She also sought the development tools, scripts, "makefiles," and other software used to compile, debug, and test the iVotronic system, the PEBs, and the elements of the Unity software suite. Jennings sought the hardware from the Sarasota County Defendants and the source code from the State Defendants. A 114. The State is required to keep the source code in escrow. *See* FLA. STAT. § 101.5607(1)(a); FLA. ADMIN. CODE R. 1S-2.015(5)(f).

accurately recorded the test voters' selections. Defendants argued that their own test would suffice to resolve this election contest; Jennings argued that the adversarial system generally and Florida's election-contest statute specifically entitle each candidate to conduct his or her own tests. *See id.* at 142-45.

The trial judge denied Jennings's motion for expedited discovery and instead gave Defendants 15 days to respond to Jennings's discovery requests. *Id.* at 174. The judge also denied without prejudice Jennings's request that the State Defendants produce the source code and stated that the request would not be granted unless Plaintiff found a way to ensure that ES&S (which was not yet a Defendant in the case) would have an opportunity to be heard. *Id.* Finally, he ordered Defendants to allow the two candidates' experts to "observe," but not to participate in, the State's upcoming parallel test. *Id.*; *accord id.* at 179. In doing so, he stated, "I'm sure we will be addressing [Defendants' test] again, because whatever they do is going to be unacceptable to somebody. But it may answer the question, too. I'm sure hoping it will." *Id.* at 174.

IV. Jennings Filed New Motions for Expedited Discovery of the iVotronic System and for an Order Protecting ES&S's Purported Trade Secrets.

Following the trial judge's guidance, Jennings filed an amended complaint naming ES&S as a Defendant. A 206. ES&S invoked the trade-secret privilege and resisted the discovery that Plaintiffs again sought from the State and County Defendants.

Jennings filed new motions to compel. *Id.* at 232, 299. To expedite matters, Jennings took two extraordinary steps: first, for purposes of those motions only, she conceded that ES&S's source code and related technology were privileged "trade secrets"; second, although usually protective orders are sought by the trade secret's *owner*, Jennings herself moved for a protective order to assuage any concerns ES&S might have about its purported trade secrets being disclosed to a business competitor. *Id.* at 241.

On Wednesday, December 6, after Defendants had refused to produce the iVotronic materials, Jennings's counsel contacted the judge's chambers to set a two-hour hearing on her motions to compel, but was told that the next available date on the judge's calendar was nine days away, on December 15. So the hearing was set for the morning of Friday, December 15. *Id.* at 353.

The next day, December 7, ES&S filed a motion seeking to postpone the hearing at least until shortly before Christmas. *Id.* at 271. Counsel for ES&S asked for and was granted a one-hour hearing on its motion the next day, on December 8. At that hearing, the court granted ES&S's motion in part and set an evidentiary hearing for December 19 and 20 on Plaintiffs' motions to compel and motion for protective order. *Id.* at 460-62. The December 15 hearing was subsequently canceled.

Also on December 7, Jennings and the individual voter Plaintiffs filed a joint notice setting a case-management conference for Friday, December 15, and requesting prompt entry thereafter of an expedited scheduling order. *Id.* at 403. Florida Rule of Civil Procedure 1.200(a) makes such conferences mandatory upon any party's "notice," without the need to file a motion. *Id.* at 404. Plaintiffs' joint notice set out a detailed proposed schedule, which Defendants largely agreed to, although they proposed a trial date in mid-February 2007 while Plaintiffs proposed one in late January 2007. *Id.* at 408-09. The joint notice also explained that Florida law gives election contests "priority" status, and therefore they must be expedited under the Florida Rules of Judicial Administration. *Id.* at 404; *see* FLA. STAT. § 102.168(2), (6), (7) (expressly setting expedited deadlines for filing complaints, filing answers, holding hearings, and taking testimony in election-contest cases); FLA. JUD. ADMIN. R. 2.215(g), 2.545(c) (requiring that priority cases be "appropriately advanced on the docket," given "priority in scheduling consistent with its priority case status," and "expedite[d] . . . to the extent reasonably possible"); *see also, e.g., Marina v. Leahy*, 578 So. 2d 382, 384 (Fla. 3d DCA 1991); *Jacobs v. Seminole County Canvassing Bd.*, No. 00-CA-2203-16-L, 2000 WL 1720698, *1 (Fla. Cir. Ct. Nov. 20, 2000).

As described above, the block of time set aside on the judge's calendar for Friday morning, December 15, to hear Jennings's motions to compel, came open

when the judge postponed that hearing to the following week. But the judge ruled from the bench at ES&S's December 8 hearing that no case-management conference would be held on December 15 because "we don't do that." *Id.* at 417. Today, nearly a month and a half after Jennings filed this "priority case" under Florida's election-contest statute, the judge has yet to hold a case-management conference or issue a scheduling order.

V. The Trial Court Held a Two-Day Evidentiary Hearing on Jennings's Motions.

On December 19 and 20, 2006, the trial court conducted a two-day evidentiary hearing on Plaintiffs' motions to produce the iVotronic system's hardware, software, and source code, and on Jennings's related motion for protective order. In the opening statement, Jennings's counsel explained that "[t]he trade-secret privilege is not absolute. In each case the court must weigh the importance of protecting the trade secret against the interests in facilitating the trial and promoting the just end to the litigation. . . . It is Defendants' burden to show that, even with an appropriate protective order, they would still suffer harm." A 525-26. Likewise, ES&S told the judge that he "must ultimately undertake" a "balancing of interest[s] . . . in deciding the issues presented in today's motion. . . . [T]he parties seeking production must . . . show that the necessity for this privileged information outweighs the harm that disclosure will cause to the trade-secret owner." *Id.* at 528-29.

Jennings presented one expert on residual votes (*i.e.*, undervotes and overvotes) and statistical analysis of election data — Professor Charles Stewart, the chair of the Political Science Department at the Massachusetts Institute of Technology (MIT) — and one expert on electronic voting technology — Professor Dan S. Wallach of the Computer Science Department at Rice University. Neither Vern Buchanan nor the governmental Defendants who were the targets of Jennings’s motion to compel presented any witnesses. ES&S presented one expert on elections and voting patterns — Professor Michael C. Herron of the Government Department at Dartmouth College.

A. Professor Stewart’s Expert Political-Science Testimony

Professor Stewart testified on three issues: (1) whether the 2006 congressional undervote in Sarasota County was excessive; (2) whether Jennings would have prevailed over Buchanan absent an excess undervote; and (3) possible causes of the excess undervote. A 531.

1. The congressional undervote in Sarasota County was excessive.—

Professor Stewart found a total “excess undervote” of roughly 14,000 congressional undervotes — 12% of all votes cast on Sarasota County’s electronic ballots. *Id.* Sarasota County, Jennings’s political stronghold, accounted for “a bit over half” the district’s total congressional votes, but fully 86% of the district’s congressional undervotes (18,412 out of 21,368 undervotes). *Id.* at 532.

	<u>Buchanan</u>	<u>Jennings</u>	<u>Undervote</u>
Sarasota County:	58,632	65,487	18,412
The Four Other Counties:	60,677	53,453	2,956
TOTAL:	119,309	118,940	21,368

Id. at 570. Based on a statistical analysis of undervote rates for both paper ballots and electronic ballots in 28 contests on Sarasota County’s November 2006 ballot, Professor Stewart estimated that the “normal undervote” rate for the Thirteenth District congressional race there was roughly 3% (approximately 4,000 votes) and the “excess undervote” rate was roughly 12% (approximately 14,000 votes). *Id.* at 532-34, 549; *see also id.* at 571-72.

2. Jennings would have prevailed over Buchanan absent the excess undervote.— Professor Stewart testified that “Jennings would have won had the excess undervote been reallocated to the two candidates.” *Id.* at 534. His best estimate of her “likely winning margin” was nearly 3,200 votes. *Id.*; *see id.* at 573-75.

Professor Stewart derived that estimate by statistically analyzing the “ballot-image logs” for every individual ballot cast electronically in Sarasota County’s November 2006 general election. *Id.* at 534. Studying voters’ preferences not only for the congressional race but also for the statewide races for U.S. Senator, Governor, Attorney General, Chief Financial Officer, and Agriculture

Commissioner, Professor Stewart determined that the voters whose congressional ballots were recorded as undervotes likely supported Jennings over Buchanan by a margin of approximately 63% to 37%. *Id.* So if the roughly 14,000 “excess” congressional undervotes had been properly tallied as votes for one or the other congressional candidate, Jennings would have picked up about 8,800 votes and Buchanan would have picked up only about 5,200 votes, for a net swing of about 3,600 votes toward Jennings, far more than enough to overcome Buchanan’s officially certified 369-vote “winning” margin. *Id.*; *see id.* at 573-74.

Applying the same 63%-to-37% split, Professor Stewart testified that, even if machine malfunction caused only 1,500 “excess” undervotes — less than 10% of the total congressional undervotes reported in Sarasota County — properly tabulating those 1,500 ballots would have changed the election’s outcome, with Jennings narrowly prevailing over Buchanan. *Id.* at 535-36; *see also id.* at 575. Therefore, “if 10 percent of the undervote were attributable to machine malfunction and 90 percent to some other causes” — voter confusion or something else — the election’s outcome “[i]n all likelihood” would have been reversed. *Id.* at 536.

3. *Machine failure likely caused the excess undervote that swung the election to Buchanan.*— Professor Stewart testified that the low congressional undervote rate among paper ballots in Sarasota County and among all ballots in the

district's four other counties demonstrated that the excess electronic undervote in Sarasota County was "unlikely to be due to the negativity of the campaign or voter revulsion with . . . both candidates," as voters throughout the district overwhelmingly fell into "one media market" and "experienc[ed] basically the same campaign." *Id.* at 536, 544, 554.

Professor Stewart testified that the "excess undervote" associated with Sarasota County's iVotronic system might be attributable *in part* to voter confusion caused by the congressional ballot's format. *Id.* at 554. But he found it implausible that the *entire* excess undervote — 12% of all electronic ballots in Sarasota County, or roughly 14,000 votes — could be attributed to voter confusion. *Id.* at 539-40, 542, 554.

- **First**, the congressional ballot on Sarasota County's iVotronic machines was "fairly straightforward" and "not . . . particularly confusing" visually. *Id.* at 538; *see id.* at 536-38, 576-77.
- **Second**, shortly before any voter could actually cast his vote, he would have seen a "Summary Ballot" review screen warning him in red letters if "No Selection [Was] Made" for "U.S. Representative in Congress" and instructing him on how to correct that undervote. *Id.* at 537-38; *see id.* at 577.
- **Third**, ballots that were far more confusing visually than Sarasota

County's and that lacked any warnings (in red letters or otherwise) typically confused no more than 5% of the electorate — far less than the 12% excess undervote recorded in Sarasota County's congressional election. *Id.* at 538-39, 552. For example, Professor Stewart testified that with the “butterfly ballot” that Palm Beach County used in the 2000 presidential race — “the paradigmatic . . . confusing ballot” — fewer than 1% of the voters erroneously cast their ballots for the third-party candidate Pat Buchanan, and only 4% of the voters erroneously cast “overvotes” by selecting two or more candidates. *Id.* at 538; *see id.* at 578.

Furthermore, Professor Stewart presented statistical evidence pointing directly to a failure of the machines, not of the voters. *Id.* at 540-41, 579-80. He testified that the date when an iVotronic machine was “cleared and tested” by Sarasota County election workers or their contractors (as reflected by “Event Code 01” in the machine's audit log) correlates strongly with the machine's undervote rate: Machines prepared in the final days before the deadline for completing all such preparations exhibited the highest congressional undervote rates. *Id.* at 540. And another strong correlation exists between the number of machines “cleared and tested” on a given date and the undervote rate: As the County's staff or consultants got busier, clearing and testing more machines on a single day, the

congressional undervote rate climbed. *Id.* Both correlations were statistically significant and both provided “evidence that inattention” or sloppiness in preparing the touch-screen machines “may have driven up the undervote rate.” *Id.* at 541. Because this evidence “goes to the physical preparation of the machines,” not to characteristics of the voters, Professor Stewart testified, “it’s totally inconsistent with the notion that the high undervote rate is caused by voter confusion.” *Id.* at 541, 553.

Finally, pulling together his three main findings, Professor Stewart concluded that machine failure likely “altered the outcome of this election.” *Id.* at 541, 554. In any event, he explained, “statistics alone” could never prove that machine malfunction had no effect on the election’s outcome: “You need to look more closely at . . . the machines and the software.” *Id.* at 554.

B. Professor Wallach’s Expert Computer-Science Testimony

Professor Wallach testified that he could prove or disprove Jennings’s claims of machine malfunction within a reasonable degree of scientific certainty in a matter of weeks if — and only if — he had full access to the requested iVotronic hardware, software, and source code. A 558-63. Professor Wallach then presented a simplified one-page example of a software program designed to count votes for candidates, and he showed how the programmer’s inadvertent omission of one

“equals sign” could trigger a misallocation of votes to a particular candidate. *Id.* at 561.

Professor Wallach then catalogued strong candidates for software flaws that might be discovered in the iVotronic system — “latent mistakes or errors in design that [might have] escape[d the] normal testing certification processes.” *Id.* at 588. Specifically, he identified three potential “bugs”:

- **First**, a “bug” in the source code, perhaps combined with poorly calibrated touch-screens, could cause a malfunction between where a voter actually touched the screen and where the machine “understood” it was touched, thus causing votes for a particular candidate to go unrecorded. *Id.* at 561-62, 594-95.
- **Second**, a “bug” in the source code could cause data to be lost or transformed when the voter pressed the red “Vote” button above the touch-screen and his selections were transferred from the machine’s temporary volatile memory to its permanent nonvolatile memory. *Id.* at 561-62, 601. With this type of bug, the voter might well have seen a vote cast for Jennings on his review screen even though no permanent record of the vote ever got recorded.
- **Third**, a “bug” in the source code could cause votes to be miscounted when the election-specific “ballot-definition files” place too many

candidates on a single screen, as when Sarasota County placed the two-candidate congressional race on the same iVotronic screen as the seven-candidate gubernatorial race. *Id.* at 562.

Professor Wallach explained that any of these bugs could be “nondeterministic,” meaning that under identical circumstances the machine might properly record some voters’ selections and improperly record others’. *Id.* at 562-63. Such a nondeterministic bug might well affect 12% or 15% of the votes cast for a particular office or candidate. *Id.* at 563. Depending on the nature of the bug, Professor Wallach testified that he might be able to reconstruct the precise number of votes cast for each congressional candidate that were misrecorded as undervotes. *Id.* at 600.

Professor Wallach also testified at length about a half-dozen significant flaws in the Florida Bureau of Voting Systems Certification’s “parallel testing” of Sarasota County’s iVotronic machines. *Id.* at 559, 586, 588-89, 594-96, 600-02.

Finally, Professor Wallach testified that he would obey and “comply to the letter with any protective order” the court entered, as he has done in past cases involving source code designated as a trade secret. *Id.* at 558, 564. And he described how, in a patent-infringement case, he previously had been entrusted, without incident, with “Microsoft source code that is considered so sensitive that only a handful of employees within Microsoft are given access” to it. *Id.* at 558.

C. Professor Herron’s Expert Political-Science Testimony

Because the testimony of Professor Herron, Defendants’ sole witness at the evidentiary hearing, is neither cited nor even alluded to in the order below, it merits little discussion here. Two points, however, were notable.

First, Professor Herron agreed with Professor Stewart on several findings:

- Sarasota County’s electronic ballots generated an “extraordinarily high” undervote rate — between 14,000 and 15,000 more undervotes than expected. *Id.* at 621-22. While Professor Stewart referred to them as “excess undervotes,” Professor Herron had used the term “suppressed votes” prior to being retained by ES&S. *Id.* at 622, 626.
- Like Professor Stewart, Professor Herron found it “hard to imagine [that] the Sarasota result reflects deliberate voter choices” because, if “voters were driven away from participating in their congressional race by a blitz of last-minute negativity, this would have affected all [five] counties in the District 13 race and not just Sarasota.” *Id.* at 622.
- The Sarasota County voters who unintentionally cast the 14,000-plus “suppressed votes” for Congress tilted heavily Democratic and therefore, had their votes been counted, Jennings clearly “would have won.” *Id.* at 623.

- No “purely . . . statistical exercise” can “directly address the possibility that engineering lies underneath the undervote rates” in Sarasota County’s iVotronic ballots; and “ultimately, no statistical analysis of observed voting data can distinguish between ballot-format effects [that confuse voters] and engineering flaws that mimic ballot-format effects.” *Id.* at 630.

Second, ultimately, Professor Herron could offer nothing to contradict Jennings’s evidence that examining and testing the iVotronic hardware, software, and source code are reasonably necessary to prove or disprove her claim of machine malfunction. The main area of disagreement between the two political scientists involved the likely cause of the elevated undervote rate in Sarasota County: Unlike Professor Stewart, Professor Herron concluded that voter confusion based on “ballot-format effects” — especially on the part of voters over the age of 75 — by itself explained the *entire* elevated undervote rate. *Id.* at 620. But every example of high undervote rates that Professor Herron cited as demonstrating “voter confusion” from “ballot-format effects” involved the very same iVotronic technology that Sarasota County uses. *Id.* at 554, 624–25, 629–30. Therefore, Professor Herron lacked any sound basis to conclude that the real culprit was voter confusion based on ballot format, rather than machine malfunction based on a “bug” in the iVotronic source code or software. *See id.* at 588.

D. The State's "Parallel Test Summary Report"

Because the trial court's order made no mention of Professor Herron's testimony, the only evidence proffered by Defendants that ultimately mattered was a December 18, 2006 "Parallel Test Summary Report" from the Florida Division of Elections' Bureau of Voting Systems Certification. The Report stated that the parallel-test results "were successful in demonstrating 100% accuracy in recording the vote selections." A 659. The trial court's order repeated that conclusion almost verbatim, stating that the test results revealed "100% accuracy of the equipment in reporting the vote selections." *Id.* at 808.

Plaintiffs' counsel objected to this Report on the ground that it was inadmissible hearsay and could come into evidence only if the Report's author, the Chief of the Bureau of Voting Systems Certification, took the stand and was subject to cross-examination. *Id.* at 604. In overruling the hearsay objection, the judge offered this rationale: The Report "is a certification from the Department of State, who is not only authorized, but is the one agency that can issue those things and the only agency that can certify the accuracy of the testing." *Id.*

VI. The Trial Court Denied Jennings's Motions to Compel Discovery.

On Friday afternoon, December 29, 2006, the trial court issued a 16-sentence order denying all of Plaintiffs' discovery motions. The order began by explaining that, because "[a]ll parties agree for the purposes of the motions that the

Source Code and Proprietary Technology . . . constitute[] a trade secret,” the “*sole* issue for determination is whether or not Plaintiffs can demonstrate a reasonable necessity to gain access to the trade secret.” A 807 (emphasis added). The order then stated that “[t]wo parallel tests were conducted” on the iVotronic system “to verify its accuracy,” with “representatives of both Plaintiffs and Defendants . . . present”; that “[t]he test results revealed 100% accuracy of the equipment in reporting the vote selections”; and that “Plaintiffs have presented no evidence to demonstrate that the parallel testing was flawed and/or the results not valid.” *Id.* at 808. The order found that Plaintiff’s expert testimony was “nothing more than speculation and conjecture” and then concluded that granting Plaintiffs’ motions to compel would “destroy[] or at least gut[] the protections afforded those who own the trade secrets.” *Id.*

NATURE OF RELIEF SOUGHT

This Petition seeks a writ of certiorari quashing the trial court’s December 29 order, which denied Jennings’s discovery motions.

PROCEEDING ON AN EXPEDITED BASIS

Petitioner Jennings respectfully asks this Court to grant her Petition on an expedited basis, and she has thus given notice to all parties pursuant to Rule 9.300(c). The voters of Florida’s Thirteenth Congressional District are entitled to know as soon as possible whether Sarasota County’s iVotronic system rejected

thousands of legal votes cast for Christine Jennings and resulted in the “election” of the candidate who was the voters’ second choice. The answer to that question cannot be ascertained until Jennings receives the discovery she is seeking.

ARGUMENT

Under the Florida Rules of Civil Procedure, “[p]arties may obtain discovery regarding any matter, not privileged, that is relevant to the subject matter of the pending action.” FLA. R. CIV. P. 1.280(b)(1). The basis of Jennings’s complaint is that the iVotronic system Sarasota County used in the November 2006 general election rejected thousands of legal votes cast for Christine Jennings, recorded those legal votes as “undervotes,” and thereby swung the election to the less popular candidate. Access to the system’s source code as well as the iVotronic machines and related equipment is critical to any effort to determine whether the paperless electronic voting system caused the massive undervote. Therefore, the iVotronic software and hardware are not just relevant but essential to the subject matter of the pending action. This Court should grant the Petition, issue the writ, and quash the trial court’s order refusing to compel production of the relevant hardware and software, including the source code.

Although “an order denying discovery is not ordinarily reviewable by certiorari,” Florida courts have often recognized exceptions to this rule. *Medero v. Florida Power & Light Co.*, 658 So. 2d 566, 567 (Fla. 3d DCA 1995); *see, e.g.*,

Expert Installation Serv., Inc. v. Fuerte, 933 So. 2d 1231, 1233 (Fla. 3d DCA 2006); *Beekie v. Morgan*, 751 So. 2d 694, 698 (Fla. 5th DCA 2000); *Sabol v. Bennett*, 672 So. 2d 93, 94 (Fla. 3d DCA 1996); *Ruiz v. Steiner*, 599 So. 2d 196, 197-98 (Fla. 3d DCA 1992).

The standard for granting certiorari in such circumstances is well established: “(1) the order to be reviewed must constitute a departure from the essential requirements of law; (2) the order must cause material injury through subsequent proceedings; and (3) the injury must be irreparable, i.e., one for which there will be no adequate remedy after final judgment.” *Sheridan Healthcorp., Inc. v. Total Health Choice, Inc.*, 770 So. 2d 221, 222 (Fla. 3d DCA 2000). All three prongs are met here. Because the last two requirements are jurisdictional, they are addressed first.

I. The Trial Court’s Refusal to Compel Discovery Would Materially Injure Jennings.

The parties all agree that the congressional election in Florida’s Thirteenth District resulted in a statistically bizarre undervote rate. Jennings intends to argue at trial that the iVotronic system malfunctioned, rejecting thousands of legal votes cast for her and instead recording them as undervotes. Defendants seek to attribute the undervote to other causes, but cannot even agree among themselves about the source of the malfunction. ES&S asserts that “[a]ny undervote was due to factors such as ballot layout” (A 482), while the Sarasota County election supervisor

asserts that the “ballot form did not cause significant undervotes” (*id.* at 467). And the State Defendants have even suggested that individual voters’ drug use is to blame for the aberrant undervote rate. *See, e.g., id.* at 527.

Although Defendants’ theories are both contradictory and offensive to the voters of Sarasota County, now is not the time to evaluate them. Rather, this Court need only consider whether the trial judge’s refusal to compel production of the iVotronic software and hardware materially injures Jennings’s ability to pursue *her* theory about the actual cause of the undervote.

It clearly does. Without access to these materials, Jennings’s computer-science expert, Professor Wallach, will be unable to provide expert testimony at trial as to the cause of the undervote. That alone provides ample grounds for material injury sufficient to grant a writ of certiorari. *See Helmick v. McKinnon*, 657 So. 2d 1279, 1280 (Fla. 5th DCA 1995) (“[I]t is unlikely that Helmick will be able to offer an adequate expert opinion in his defense if the requested materials are not furnished. Thus, he will not be able to make a sufficient proffer on appeal to show error below justifying a reversal for new trial. . . . Accordingly, we grant the petition for writ of certiorari, and quash the order denying discovery.”).

Moreover, “[w]ithout these materials,” Jennings will be “unable to properly formulate” her case. *Id.* This has often served as the basis for granting a writ of certiorari. *See, e.g., Carroll Contracting, Inc. v. Edwards*, 528 So. 2d 951, 953

(Fla. 5th DCA 1988) (granting a writ of certiorari and reinstating a subpoena after finding that the material sought by petitioner was “necessary and possibly critical in this lawsuit”); *Marshall v. Anderson*, 459 So. 2d 384, 385 (Fla. 3d DCA 1984) (granting a writ of certiorari after finding that the order denying discovery “adversely pervades the entire subsequent conduct of the case in that it renders it virtually impossible for the plaintiff even to determine the basic elements of his cause of action”); *Colonial Penn Ins. Co. v. Blair*, 380 So. 2d 1305, 1306 (Fla. 5th DCA 1980) (granting a writ of certiorari and quashing an order denying discovery after finding it “obvious that the petitioners need the [requested material] to prepare their defense in the present lawsuit”). Here, the requested materials are critical to formulating Jennings’s case.

Furthermore, the requested materials cannot be obtained from any other source. When “there is no substitute for the information [petitioner] seeks,” and it “can be obtained only from defendants,” Florida courts routinely recognize a material injury sufficient to grant certiorari. *Criswell v. Best Western Int’l, Inc.*, 636 So. 2d 562, 563 (Fla. 3d DCA 1994); *see also Carroll Contracting*, 528 So. 2d at 952-54; *Colonial Penn Ins. Co.*, 380 So. 2d at 1306. The precise materials Jennings seeks are in the State and County Defendants’ possession, and she cannot obtain them from any other source. The facts needed to properly litigate the case will never be known unless Jennings is granted access to these materials.

The trial court's order posits that the State's post-election "parallel testing" of a handful of Sarasota County's iVotronic machines should satisfy Jennings's concerns and foreclose her need for the requested discovery. A 808. That is absurd. No state audit — overseen by the same officials who certified the defective voting machines — can substitute for the truth-finding rigors of the adversarial process. When a patient sues for medical malpractice, she is not foreclosed from discovery directed at the doctor simply because the hospital has conducted an audit and cleared the doctor of any wrongdoing. The hospital has a powerful economic interest in clearing the name of any doctor to whom it has granted privileges, and a patient cannot be denied discovery based on results from an investigation conducted by an adverse party. That would be a dangerous precedent to set. *See Moore v. Schlesinger*, 150 F. Supp. 2d 1308, 1313 (M.D. Fla. 2001) (recognizing that discovery "within the adversarial arena" has the benefit of "the attendant safeguards of the judicial process").

Moreover, the State's "parallel testing" was so thoroughly flawed that its results are worthless. As described below (see Point III-B-2 of the Argument, at pages 46 to 49), Professor Wallach testified to no fewer than six features of the tests that did not accurately replicate Election Day conditions. The State's tests were not remotely close to being conclusive on the issues that this case presents.

II. Jennings's Injury Cannot Be Adequately Remedied on Appeal.

"[C]ertiorari review of orders denying discovery has been granted where it was found that the injury caused by the order was irreparable." *Ruiz*, 599 So. 2d at 197. Here, the material injury to Jennings and other citizens of Florida's Thirteenth Congressional District will be irreparable for two reasons.

First, timing truly matters in an election contest. The term of office at issue here is only 24 months long. The cloud hanging over this election should be dispelled as quickly as possible. Given the trial judge's unwillingness to expedite this case, an appealable final judgment could be months away. By the time this Court has reversed that judgment on appeal, the parties on remand have conducted additional discovery (including properly testing the iVotronic system), and the court below has held a new trial, much of the 110th Congress will be history. Because any meaningful remedy will "be foreclosed on plenary appeal," this Court should grant certiorari review now. *Helmick*, 657 So. 2d at 1280.

Second, the harm will be irreparable because without discovery *now* there will be nothing to review on appeal *later*. Florida courts have previously granted review when petitioners have demonstrated that, absent an order compelling discovery, information critical to the case will remain undiscovered and unavailable for subsequent appellate review. "The lack of the information sought in these cases would have effectively prevented litigation of the case and there

would have been ‘no practical way to determine after judgment what the testimony would be or how it would affect the result.’” *Riano v. Heritage Corp. of S. Fla.*, 665 So. 2d 1142, 1144 (Fla. 3d DCA 1996) (quoting *Travelers Indemnity Co. v. Hill*, 388 So. 2d 648, 650 (Fla. 5th DCA 1980)); *see also Criswell*, 636 So. 2d at 563 (granting writ because “on plenary appellate review, there would be no practical way of . . . evaluating how the information [in defendants’ possession] would have affected the case”). That is true here, too. Without an order compelling discovery of the iVotronic hardware, software, and source code, Jennings cannot demonstrate conclusively that a “bug” in the source code or a malfunction of the voting equipment caused the undervote that altered the election’s outcome.

III. The Trial Court Repeatedly Departed from the Essential Requirements of Florida Law in Denying Jennings’s Motions to Compel Production of the iVotronic System Pursuant to a Protective Order.

In refusing to compel production of the core evidence in this case, the trial court departed from the essential requirements of law. As the United States Supreme Court has noted, “orders forbidding *any* disclosure of trade secrets or confidential commercial information are rare. More commonly, the trial court will enter a protective order restricting disclosure to counsel or to the parties.” *Federal Open Market Comm. of Fed. Reserve Sys. v. Merrill*, 443 U.S. 340, 362 n.24 (1979) (internal citations omitted; emphasis added). Here, in taking the

extraordinary step of forbidding *all* disclosure and refusing even to allow limited disclosure pursuant to a protective order, the trial court committed two overarching legal errors. *First*, the court applied the wrong legal test. The court apparently confused the “reasonable necessity” standard applicable to discovery disputes involving trade secrets with the “reasonable likelihood of success on the merits” standard applicable to motions for temporary injunctions. That mistake led the court to conclude wrongly that Jennings had failed to carry her burden of showing a “reasonable necessity.” And that mistake in turn led the court to refuse to conduct the required balancing of Jennings’s interests against the harm that allegedly would befall the trade-secret owner, ES&S, if the requested discovery were granted pursuant to a protective order. *Second*, the court rested its ruling on one exhibit that was admitted into evidence despite being rank hearsay, not within any hearsay exception recognized under Florida law; and at the same time, the court ignored all evidence rebutting that hearsay.

A. The Trial Court Failed to Apply the Proper Three-Step Legal Test for Discovery Disputes Involving Trade Secrets.

The trial court applied the wrong legal test for determining whether to allow discovery of materials protected by the trade-secret privilege. The privilege “is not absolute.” *Freedom Newspapers, Inc. v. Egly*, 507 So. 2d 1180, 1184 (Fla. 2d DCA 1987). Florida law provides that the trade secret’s owner “has a privilege . . . to prevent other persons from disclosing” that trade secret only “if the allowance of

the privilege will not conceal fraud or otherwise *work injustice*.” FLA. STAT. § 90.506 (emphasis added). And Florida Rule of Civil Procedure 1.280(c) provides that trade secrets may be discoverable under a protective order if the court concludes that “*justice requires*” protective measures. FLA. R. CIV. P. 1.280(c) (emphasis added). To determine whether allowing the trade-secret privilege to thwart discovery will “work injustice,” Florida courts require a balancing test. The court below failed to undertake that balancing test even though Jennings repeatedly asked it to do so. *See, e.g.*, A 352, 525, 793.

Under Florida’s balancing test, the trial court must decide whether the “necessity for the production of the [trade secrets] outweighs the interest in maintaining their confidentiality.” *Sheridan Healthcorp*, 770 So. 2d at 223. When a plaintiff seeks access to a defendant’s trade secret, this balancing test demands these three steps:

1. the plaintiff bears the burden to show “reasonable necessity” for the requested trade secrets;
2. the defendant bears the burden to show that disclosure, even under a protective order, would be harmful; and
3. the court must weigh the plaintiff’s interest in production against the defendant’s interest in maintaining confidentiality.

See id.; *see also American Express Travel Related Servs., Inc. v. Cruz*, 761 So. 2d

1206, 1209 (Fla. 4th DCA 2000).

Contrary to the trial court's findings, in Step #1, Jennings carried her burden of showing "reasonable necessity" for the iVotronic software and hardware. Yet the court bypassed Steps #2 and #3 entirely. Apparently, the judge concluded as a matter of law that, because "[a]ll parties agree for the purposes of the motions that the Source Code and Proprietary Technology . . . constitute[] a trade secret," the "*sole* issue for determination is whether or not Plaintiffs can demonstrate a reasonable necessity to gain access to the trade secret." A 807 (emphasis added). That conclusion departs from the essential requirements of law, as the issue identified by the trial judge is only the first of three that Florida caselaw requires a trial judge to consider. In any event, even as to the one issue that the trial judge *did* consider — whether Jennings had demonstrated a reasonable necessity to gain access to the iVotronic hardware, software, and source code — the court also departed from the essential requirements of law.

1. Jennings Carried Her Burden To Show a Reasonable Necessity for the Requested Trade Secrets.

Jennings carried her burden. A plaintiff seeking discovery of trade secrets must show only a "reasonable necessity" for the requested materials. *Sheridan Healthcorp*, 770 So. 2d at 222; *American Express*, 761 So. 2d at 1208; *see also Freedom Newspapers*, 507 So. 2d at 1184. And the "level of necessity which must be shown is that the information is necessary for the movant to prepare [her] case

for trial, including preparation of the movant's theories and the rebuttal of the opponent's theories." 1 MELVIN F. JAGER, *TRADE SECRETS LAW* § 5.33 (2006); *see also Pfeiffer v. K-Mart Corp.*, 106 F.R.D. 235, 236 (S.D. Fla. 1985). The test is as simple as it sounds: If a plaintiff shows that she reasonably needs evidence to make her case, she has satisfied the "reasonable necessity" burden.

Although the trial court invoked the term "reasonable necessity" in its order denying Jennings's motions, A 807-08, it effectively applied the higher "reasonable likelihood of success on the merits" standard that courts use when deciding motions for temporary injunctions. *See, e.g., Korn v. Ambassador Homes, Inc.*, 546 So. 2d 756, 757 (Fla. 3d DCA 1989). Demanding that higher standard before *enjoining* a defendant's conduct makes good sense. But here, the issue is a simple discovery dispute, not an injunction. The core issue driving the case is the pervasive malfunctioning of the iVotronic machines that rejected thousands of legal votes cast for Jennings and thus changed the election's outcome. Jennings seeks access to the machines to make her case. It would be entirely backwards to suggest that she must have compelling evidence to prove a reasonable likelihood of success on the merits *before* she has been given access to the very evidence she needs to prove her case on the merits.

Applying the wrong standard led the court, in turn, to conclude that Jennings's expert testimony was too "speculati[ve] and conjectur[al]" to meet the

legal threshold for granting access to ES&S's trade secrets. A 808. Had the court properly applied the "reasonable necessity" standard, it would have found that standard to be easily satisfied by the testimony of Jennings's experts.

In determining "reasonable necessity," context matters enormously. Paperless electronic voting systems are peculiarly difficult to audit. They leave no tangible evidence of a voter's decision to cast a vote (or not) for a candidate; all they leave behind is an electronic record of what the computer software "says" the voter did. There is no paper ballot prepared by the voter that can be reviewed post-election to determine whether the system correctly or incorrectly recorded his vote. The electronic "ballot-image logs" reviewed by the experts who testified at the evidentiary hearing reflect only what the computer program says the voter did, as the individual voters have no opportunity to verify those logs before leaving the polling place. Given these inherent constraints in analyzing the performance of any paperless electronic voting system, Jennings's experts — MIT political scientist Charles Stewart and Rice computer scientist Dan S. Wallach — provided more than ample evidence that access to the iVotronic hardware, software, and source code was reasonably necessary for Jennings to prepare her case for trial.

Professor Stewart testified to the following key facts:

- The later a machine was prepared, and the more machines prepared on a given day, the higher the undervote rate climbed.

- Given that the most convoluted ballot designs (such as the infamous “butterfly ballot” that Palm Beach County used in the 2000 presidential election) have confused fewer than of 5% of the voters, it is highly unlikely that the extraordinary 15% undervote rate on Sarasota County’s iVotronic machines can be explained solely by voter confusion.
- Even if only 1,500 of Sarasota County’s 18,000 congressional undervotes are attributable to machine malfunction, Jennings still would have won the election because Sarasota County was her political stronghold.

Professor Wallach testified extensively to what is already intuitive: To prove or disprove allegations of a malfunction in the iVotronic hardware and software, one needs access to the hardware and software that is alleged to have malfunctioned. This is not a case in which a plaintiff seeks a customer list or some other material that may be tangential to the complaint’s allegations. *Cf. Grooms v. Distinctive Cabinet Designs, Inc.*, 846 So. 2d 652, 655 (Fla. 2d DCA 2003). Rather, this is a case where access to the requested discovery is essential to proving the allegations.

Professor Wallach identified three potential software flaws that might be discovered in the iVotronic system, and he testified that if they exist he could probably find them within a matter of weeks. But without access to the requested materials, Professor Wallach will be prevented from developing the expert

testimony crucial to Jennings's case. *See Helmick*, 657 So. 2d at 1280.

Professor Wallach's and Professor Stewart's testimony more than sufficed for Jennings to carry her burden of showing a "reasonable necessity" for the iVotronic software and hardware that she requested. Had it applied the proper standard, the trial court would have reached that conclusion as well.

2. Defendants Did Not Carry Their Burden To Show that Disclosure Under an Appropriate Protective Order Would Harm ES&S.

The trial court further erred in ignoring Defendants' failure to carry their burden. After a trial court determines that the requested production constitutes a trade secret and that the party seeking discovery has a reasonable necessity for that trade secret, "the party resisting discovery [must] show 'good cause' for protecting or limiting discovery *by demonstrating . . . that disclosure may be harmful.*" *American Express*, 761 So. 2d at 1209 (emphasis added); *see Cytodyne Tech., Inc. v. Biogenic Tech., Inc.*, 216 F.R.D. 533, 536 (M.D. Fla. 2003) (applying Florida law) (holding that, once the trade-secrets owner "has shown the requested discovery to be trade secrets, [the owner] must then demonstrate that disclosure might be harmful"); *Kaiser Aluminum & Chem. Corp. v. Phosphate Eng'g & Const. Co.*, 153 F.R.D. 686, 688 (M.D. Fla. 1994); *Empire of Carolina, Inc. v. Mackle*, 108 F.R.D. 323, 326 (S.D. Fla. 1985). Furthermore, "[t]he relevant inquiry with respect to injury is not with respect to the harm caused by a public

disclosure. Rather, the inquiry must be measured with respect to the disclosure under an appropriate protective order.” 1 MELVIN F. JAGER, TRADE SECRETS LAW § 5.33 (2006).

ES&S presented absolutely no evidence that disclosure pursuant to an appropriate protective order would cause it harm. Nor could it have presented any credible evidence of harm, as Jennings is not a business competitor of ES&S’s and had agreed to be bound by a stringent protective order that would have prevented any trade secret from leaking out to ES&S’s competitors. *See Seta Corp. of Boca, Inc. v. Office of Attorney General*, 756 So. 2d 1093, 1094 (Fla. 4th DCA 2000) (ordering discovery because the party seeking access to the trade secrets was “not a competitor” and protections could be taken to prevent disclosure to nonparty business competitors); *Freedom Newspapers*, 507 So. 2d at 1184 (“The likelihood of [any] abuse of the discovery process is lessened where, as here, the party seeking discovery appears to have no real interest in the business techniques of the [party invoking the trade-secret privilege].”). So instead of trying to conjure up some evidence of actual harm, ES&S argued (in its post-hearing brief, but never before or at the evidentiary hearing) that harm is simply “presumed” whenever disclosure of a trade secret is at issue. *See A 732-34.*

But as explained above, that misstates the law. So the parties’ concession below that the requested iVotronic materials constitute a trade secret in no way

alleviated ES&S's burden to show how disclosure under an appropriate protective order would be harmful. By denying Jennings's discovery while overlooking ES&S's failure to shoulder its burden, the trial court committed reversible legal error. *See Sabol*, 672 So. 2d at 94 (quashing an order denying discovery because the trial court never expressly found that the party resisting discovery made an "affirmative showing" of the harm it would suffer).

3. The Trial Court Did Not Conduct the Required Balancing Test.

The trial court also erred by performing no balancing of interests.

[Because] the trade-secret privilege is not absolute, . . . [i]n each case the judge must weigh the importance of protecting the claimant's secret against the interests in facilitating the trial and promoting a just end to the litigation. Such factors as the potential impact of disclosure upon the holder's business, protection afforded by copyright and patent laws, and necessity of disclosure to the presentation of the opponent's case may guide the judge in deciding whether to order disclosure.

Inrecon v. Village Homes at Country Walk, 644 So. 2d 103, 105 (Fla. 3d DCA 1994); *see also Fortune Pers. Agency of Ft. Lauderdale, Inc. v. Sun Tech Inc. of S. Fla.*, 423 So. 2d 545, 546 n.6 (Fla. 4th DCA 1982); *Auto Owners Ins. Co. v. Totaltape, Inc.*, 135 F.R.D. 199, 203 (M.D. Fla. 1990).

Here, the judge did not weigh any of these factors. Rather, he simply ***assumed*** — based on no affirmative evidence offered by ES&S or any other Defendant — that granting Jennings's motions would "destroy[] or at least gut[]

the protections afforded those who own the trade secrets.” A 808. Had the trial court conducted the required balancing, the result surely would have been different, as ES&S had presented *no* evidence of harm.

“The broad judicial discretion which the trial court enjoys in ruling on discovery matters of this type cannot properly be exercised in a vacuum or on a mere whim. The court needs sufficient insight into the relevant factors which must be weighed before deciding the competing interests of the respective parties.” *Beck v. Dumas*, 709 So. 2d 601, 603 (Fla. 4th DCA 1998). Here, the trial court ignored the relevant factors and failed to perform *any* balancing of interests. Those are clear departures from the essential requirements of law.

B. The Trial Court Rested Its Ruling Almost Entirely on a Public Report That Was Inadmissible as Hearsay, While Ignoring Contrary Evidence That Had Been Properly Admitted.

Aside from misapplying each of the three prongs of Florida’s legal test for the trade-secret privilege, the trial court also committed the most basic legal error in misreading Florida’s Evidence Code. Specifically, the court erred first in resting its ruling almost entirely on inadmissible hearsay, and second in ignoring properly admitted evidence rebutting that hearsay.

1. The Key Piece of Evidence on Which the Trial Court Relied Was Inadmissible as Hearsay.

The linchpin of the trial court’s order was its findings that the State had conducted “[t]wo parallel tests” on the iVotronic system with “representatives of

both Plaintiffs and Defendants [both] present,” that the “test results revealed 100% accuracy of the equipment in reporting the vote selections,” and that “Plaintiffs have presented no evidence to demonstrate that the parallel testing was flawed and/or the results not valid.” A 808. Those findings are grounded, however, on a blatant legal error.

At the evidentiary hearing, Defendants’ sole witness offered no testimony on the “parallel tests” of the iVotronic machines that Florida’s Division of Elections had conducted in late November and early December 2006. Indeed, he admitted that he had no expertise in electronic voting systems, “kn[ew] nothing about . . . ballot programming software,” and had no personal knowledge of these parallel tests. *Id.* at 625, 631-32. Defendants’ evidence about the parallel tests thus came instead from ES&S’s Exhibit 7, a certified copy of the December 18, 2006 “Parallel Test Summary Report” prepared by the Florida Division of Elections’ Bureau of Voting Systems Certification. *Id.* at 652.

Plaintiffs objected to the Report as hearsay, arguing that it could come into evidence only if its author — apparently David R. Drury, the Chief of the Bureau of Voting Systems Certification, whose initials appear on the Report’s cover — took the stand and was subject to cross-examination. *Id.* at 604. Plaintiffs argued that recent Supreme Court precedent — *Lee v. Department of Health & Rehabilitative Services*, 698 So. 2d 1194, 1201 (Fla. 1997) — expressly held that

Florida's public-records hearsay exception (unlike its federal counterpart) does not provide for the admission of factual findings resulting from a government agency's investigation or audit and that "'in Florida, rather than offering this type of record, a witness must be called who has personal knowledge of the facts.'" A 604 (quoting *Lee*, 698 So. 2d at 1201).

ES&S's counsel largely avoided the hearsay issue and instead argued a point that was entirely uncontested, namely that the certified copy of the State's Report was self-authenticating:

Your Honor, . . . as a record which is under seal, there is no doubt that this is a record from the Department of State. . . . This is an official declaration by a division of the government of the State of Florida. . . . [S]ince it is the reflection of official action by the State, we would ask that it be admitted into evidence.

Id.

After confirming that the Report "was issued by the Department of State," the court overruled Plaintiffs' objections. The court's entire explanation, just two sentences long, seemingly confused the *authentication* of a public record with the public-records exceptions to the *hearsay* rule:

This case cited here [*Lee v. Department of Health & Rehabilitative Services*] relates to factual findings as a result of determining an investigation made pursuant to authority granted by law. I believe what they [ES&S] have there [in the State's Report] is a certification from the Department of State, who is not only authorized, but is the one agency that can issue those things and the only agency that can certify the accuracy of the testing.

Id.

The trial judge's ruling was wrong as a matter of law, both under the plain text of Florida's Evidence Code and under controlling Florida Supreme Court precedent. The Parallel Test Summary Report was hearsay because ES&S offered it in evidence "to prove the truth of the matter asserted" — the supposed accuracy of the iVotronic machines. FLA. STAT. § 90.801(1)(c). The Report was therefore inadmissible, *see id.* § 90.802, unless it fell within Florida's hearsay exception for public records and reports, *see id.* § 90.803(8). For two reasons, the Report fell outside that exception and therefore was inadmissible.

First, Florida's public-records hearsay exception, unlike its federal counterpart, does *not* cover "factual findings resulting from an investigation made pursuant to authority granted by law." FED. R. EVID. 803(8). This type of public record "was intentionally omitted from section 903.08(8) of [Florida's] evidence code." CHARLES W. EHRHARDT, FLORIDA EVIDENCE § 803.8 (2006 ed.). "The drafters felt that the results of official investigations lacked sufficient reliability to offset the prejudice that would result to the party against whom an unreliable report is introduced." *Id.* at n.20. Reports containing "evaluations or statements of opinion by a public official, while within the public-record exception to the Federal Rules, are [thus] inadmissible hearsay under the [Florida] Evidence Code." *Id.*

The Supreme Court recently reiterated that very point in *Lee v. Department of Health & Rehabilitative Services*, 698 So. 2d at 1201. And the Court explained that, “[i]n Florida, rather than offering this type of record, a witness must be called who has personal knowledge of the facts.” *Id.* (citation omitted). The State’s Parallel Testing Summary Report falls squarely within the category of inadmissible public records delineated by the Code and by the Supreme Court’s decision in *Lee*.

Second, even if admission of the Report were not foreclosed as a matter of law, the Report would be inadmissible because its “sources of information [and] other circumstances show [its] lack of trustworthiness.” FLA. STAT. § 90.803(8). The Report was completed literally the day before the hearing by the chief of the very bureau that certified the machines Jennings alleges malfunctioned in this case. The core allegation in Jennings’s lawsuit — pervasive malfunctioning of the electronic voting system certified by the Bureau of Voting Systems Certification — renders the Bureau Chief’s Report vindicating the system as “100% accurate” inherently untrustworthy. A Report from the Bureau of Voting Systems Certification whitewashing a Bureau-certified voting system is no more trustworthy than a report from a hospital vindicating one of its own physicians after he has been accused of malpractice.

The judge’s erroneous ruling appears to be grounded in his repeated references to the report being “a **certification** from the Department of State.” A

604 (emphasis added); *see also id.* (“This was issued by the Department of State, correct?”); *id.* (calling the Department of State “the one agency . . . that can certify”). ES&S’s counsel invited this confusion by skirting the hearsay issue and instead addressing certification. *Id.* The whole discussion about certification and authentication, however, was beside the point: “Although a public record has been authenticated, it is not admissible unless it is also admissible under section 90.803(8), the public-records exception to the hearsay rule, and is not disqualified by any of the other rules of exclusion.” CHARLES W. EHRHARDT, FLORIDA EVIDENCE § 901.7 (2006 ed.).

Had the court below focused correctly on the hearsay problem, it would have excluded the State’s Parallel Testing Summary Report, which in turn would have gutted the key finding in the court’s order: that the parallel-test results demonstrated the iVotronic system to be “100% accurate.” A 808.

2. The Trial Court Ignored Properly Admitted Evidence Rebutting the Hearsay.

The trial court piled one error on the next, as it then went on to find that “Plaintiffs have presented no evidence to demonstrate that the parallel testing was flawed and/or the results not valid.” A 808. Although Jennings certainly could have presented *more* evidence of the parallel tests’ flaws if Defendants had put the Report’s author on the stand, she nonetheless presented ample evidence to discredit the parallel tests and thus to render clearly erroneous the trial judge’s finding.

Specifically, Professor Wallach testified that the State's parallel tests were "incomplete," were "not conclusive in any way," "weren't conducted the way we would have wanted," were subject to "a number of criticisms," did not use the machines the way they actually were used on Election Day, did not involve "enough machines . . . to be a statistical[ly valid] sample," tested only two machines chosen by Jennings (out of roughly 1,500 total machines in Sarasota County), lacked "sufficient test coverage," and could not possibly "rule out the [existence] of a software bug." *Id.* at 588-89, 595, 600-02.

Professor Wallach raised six fundamental flaws in the State's parallel tests that could render their results invalid.

First, he testified that actual voters on Election Day used the touch-screens in a horizontal or nearly horizontal position "at desk height," but the parallel testers used them in a vertical position at shoulder height. *Id.* at 559. That could matter, he explained, because a voter is more likely to rest both hands on a horizontal screen, and there have "been studies that show if, for example, . . . your thumb is [inadvertently] touching the screen on one side while you're touching [the screen with your voting hand] on the other [side], that could cause errors." *Id.* at 595; *see id.* at 602. He also testified that "[b]ecause in the parallel testing the machines weren't operated at a normal angle of view, it's difficult" to determine whether

touch-screen miscalibration contributed to the iVotronic system's malfunction. *Id.* at 596.

Second, Professor Wallach testified that the State's 12 test voters lacked the diversity appropriate for a proper simulated-election study: "[Y]ou would try to assume the behavior of a variety of different voters, whether it's a shaking hand or large fingers or small fingers. You would try a number of different things that weren't considered during the [State's] parallel test." *Id.* at 595; *see id.* at 601-02. He specifically described "a test that the State of California conducted on Diebold [electronic voting] machines, where they discovered that one particular [test] voter had a habit of dragging her finger on the screen, and that [this] behavior induced the machine to crash. Had they not had a broad demographic of test voters, they would never have discovered this particular bug." *Id.* at 602; *see id.* at 563.

Third, Professor Wallach testified that the State's test voters, all of whom "work for the same agency that had already certified the equipment and the software," did not provide a sufficiently "broad[] selection of voters" reflecting "the demographic composition of Sarasota" — a factor that he stated "absolutely does matter" in judging the test results' validity. *Id.* at 601.

Fourth, Professor Wallach testified that the test voters should not have been instructed to vote slowly because some actual voters move very quickly across the

touch-screen, and “rapid touches of a computer screen [sometimes cause it] to freeze or otherwise malfunction.” *Id.* at 602.

Fifth, Professor Wallach testified that the State’s parallel tests used too few machines and too few ballots — shortcomings that deprived the test of “a more statistically significant sample.” *Id.*

Sixth, Professor Wallach criticized the state tests’ scripts because they never “used a vote pattern in which a vote for Buchanan was entered” when the screen with the congressional race first appeared; literally every script called for the tester initially either to press Jennings’s name on the screen or to skip the congressional race. *Id.*

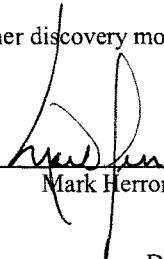
Professor Wallach also testified that the State had rejected specific suggestions that Jennings and her experts had provided about how to improve the parallel tests. *Id.* at 589. He further testified that flawed parallel tests might fail to reveal specific types of iVotronic machine malfunction potentially at issue in this case. *Id.* at 586, 594-95.

Given the sheer mass and detail of Professor Wallach’s critique of the State’s parallel tests, the trial judge’s finding that “Plaintiffs have presented no evidence to demonstrate that the parallel testing was flawed and/or the results not valid” is breathtaking. That the judge gave great weight to Defendants’ hearsay

Report about the parallel tests while ignoring live expert testimony thoroughly discrediting those tests is all the more inexplicable.

CONCLUSION

For the foregoing reasons, Petitioner Christine Jennings respectfully asks this Court to grant a writ of certiorari on an expedited basis and to quash the trial court's December 29, 2006 order denying her discovery motions.



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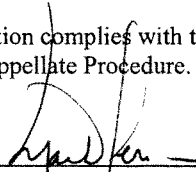
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CERTIFICATE OF COMPLIANCE

I HEREBY CERTIFY that this Petition complies with the font requirements of Rule 9.100(1) of the Florida Rules of Appellate Procedure.



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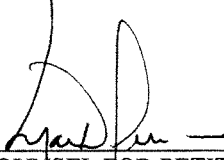
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IN THE DISTRICT COURT OF APPEAL
FIRST DISTRICT OF FLORIDA
CASE NO. _____
LT NO. 2006 CA 2973

CHRISTINE JENNINGS, as nominee of the Democratic Party
for Representative in Congress from the State of Florida's
Thirteenth Congressional District,

Petitioner,

v.

ELECTIONS CANVASSING COMMISSION OF THE STATE OF FLORIDA;
SARASOTA COUNTY CANVASSING BOARD;
KATHY DENT, as SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE STATE OF FLORIDA;
DAWN K. ROBERTS, as DIRECTOR OF THE DIVISION OF ELECTIONS
OF THE STATE OF FLORIDA;
VERN BUCHANAN, as nominee of the Republican Party for Representative in Congress
from the State of Florida's Thirteenth Congressional District; and
ELECTION SYSTEMS & SOFTWARE, INC.,

Respondents.

APPENDIX TO EMERGENCY PETITION FOR A WRIT OF CERTIORARI
VOLUME 1 OF 2

On Petition for a Writ of Certiorari to the Circuit Court of the Second Judicial Circuit,
in and for Leon County
Honorable William L. Gary

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Tab 1

**IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION**

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
from the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

No: **2006 CA 2973**

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, consisting of Governor Jeb
Bush, Chief Financial Officer Tom Gallagher, and State
Senator Daniel Webster; SARASOTA COUNTY
CANVASSING BOARD, consisting of Supervisor of
Elections Kathy Dent, Judge Phyllis Galen, and
Commissioner Paul Mercier; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; and VERN BUCHANAN,
as nominee of the Republican Party for Representative
in Congress from the State of Florida's Thirteenth
Congressional District,

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CLERK OF CIRCUIT COURT
LEON COUNTY, FLORIDA

Defendants.

COMPLAINT TO CONTEST ELECTION

1. This is an action to contest the Elections Canvassing Commission's November 20, 2006 certification that Vern Buchanan received 369 more votes than Christine Jennings in the election for the United States House of Representatives for Florida's Thirteenth Congressional District. The vote totals in the certification are wrong because they do not include thousands of legal votes that were cast in Sarasota County but not counted due to the pervasive malfunctioning of electronic voting machines. The number of uncounted votes in the County is

more than sufficient to call into doubt, indeed to change, the result of the election. Thus, Christine Jennings is entitled to appropriate relief under Section 102.168, Florida Statutes. It is critically important that this Court provide such relief promptly -- in the form of a new election -- to ensure that the will of the people of the Thirteenth District is respected, and to restore the confidence of the electorate, which has been badly fractured by this machine-induced debacle.

2. The Elections Canvassing Commission certified vote totals exclude the legal votes of thousands of Sarasota County voters who used the County's electronic voting machines to vote in the election for the Thirteenth District seat and did not have their votes recorded. Indeed, the electronic voting machines in Sarasota County failed to record votes in this race for one out of every seven voters -- nearly 15% of those who voted using the machines. There is no possibility that so many Sarasota County voters would have voluntarily abstained from voting in this hotly contested, high-profile race. Statistical analysis confirms that common-sense conclusion. Even more strikingly, the eyewitness accounts of hundreds of Sarasota County voters, and the contemporaneous records of the Sarasota County Supervisor of Elections, document that the electronic voting machines in Sarasota County used in early voting and on November 7, 2006 were systematically failing to record votes cast for candidates in the Thirteenth District congressional race -- particularly votes cast for Plaintiff Christine Jennings.

3. By law, every polling place in Florida displays a "Voter's Bill of Rights" stating that "Each registered voter in this state has the right to: . . . Vote on a voting system that is in working condition and that will allow votes to be accurately cast." § 101.031(2), Florida Statutes (2006). In the election challenged here, Sarasota County election officials failed to deliver on that promise. Indeed, the failure to count the legal votes of the thousands of Sarasota County voters who went to the polls and cast votes in the Thirteenth District race is a miscarriage of the

electoral process that can -- *and must* -- be remedied in this contest action. These voters should not forfeit their constitutional right to vote because the County's machines malfunctioned. Yet disenfranchisement is exactly what will happen unless the Election Canvassing Commission's certification is declared void. If the uncounted legal votes in Sarasota County had been properly recorded and counted, Plaintiff would be entitled to prevail in this race. The voting percentages in the County ran significantly in Plaintiff's favor. The votes she lost due to machine malfunction would thus be more than enough to reverse the razor-thin margin Defendant Buchanan holds in the certified result. Thus, the current election result cannot stand. The voters of the Thirteenth District -- all of the voters, including those disenfranchised by machine failure -- should decide the outcome, and the proper remedy is therefore to hold a new election in the district as promptly as possible.

Common Allegations

4. This is an action to contest an election under Section 102.168, Florida Statutes, which provides that the outcome of an election "may be contested in the circuit court by any unsuccessful candidate for such office" based on the "rejection of a number of legal votes sufficient to change or place in doubt the result of the election." Fla. Stat. § 102.168(3)(c).

5. Section 102.1685, Florida Statutes, establishes Leon County as the proper venue for this action.

6. The Thirteenth Congressional District of Florida comprises all of DeSoto, Hardee, and Sarasota Counties, and parts of Charlotte and Manatee Counties.

7. Plaintiff Christine Jennings is the Democratic candidate for the Representative in Congress from Florida's Thirteenth Congressional District.

8. Section 102.111 creates the Elections Canvassing Commission and charges it with certifying elections and determining who has been elected for each office. Governor Jeb Bush, Chief Financial Officer Tom Gallagher, and State Senator Daniel Webster are the members of the Elections Canvassing Commission. Section 102.168(4), Florida Statutes, provides that the Elections Canvassing Commission is an indispensable and proper party defendant in contest proceedings for federal elections.

9. The Sarasota County Canvassing Board is constituted in accordance with Section 102.141, Florida Statutes, and is comprised of Kathy Dent, Supervisor of Elections; Phyllis Galen, county court judge, who acts as chair; and Paul Mercier, chair of the board of county commissioners. The Sarasota County Canvassing Board is charged with canvassing and certifying Sarasota County's elections to the Department of State.

10. Kathy Dent is the Supervisor of Elections of Sarasota County. Kathy Dent is a member of the Sarasota County Canvassing Board and in her capacity as Supervisor of Elections is charged with overseeing all federal, state, and county elections in Sarasota County.

11. Sue M. Cobb is the Secretary of State for the State of Florida. The Secretary serves as the State's Chief of Elections.

12. Dawn K. Roberts is the Director of the Division of Elections for the State of Florida.

13. Vern Buchanan is the Republican candidate for the Representative in Congress from the Florida's Thirteenth Congressional District. Section 102.168(4), Florida Statutes, provides that the apparently successful candidate is an indispensable party to any action brought to contest the election of a candidate.

14. On November 7, 2006 ("Election Day"), the State of Florida conducted an election for numerous offices, including the Representative in Congress from the Thirteenth District. Early voting and voting by absentee ballot were permitted for this election (as for all state elections).

15. For both early voting and voting on Election Day, Sarasota County made use of electronic voting machines, called "iVotronic" machines, manufactured by Electronic Systems & Software, Inc. Sarasota County does not use iVotronic machines (or any other electronic voting machines) for absentee balloting. For absentee balloting, Sarasota County uses paper ballots read by optical-scanning equipment.

16. The first unofficial results reported on November 8, 2006 for the Thirteenth District congressional race showed that in Sarasota County, there were 58,534 votes for Vern Buchanan, 65,367 votes for Christine Jennings, and 18,382 undervotes.

17. On November 13, 2006, the Elections Canvassing Commission ordered a machine recount for the race pursuant to Section 102.141(6), Florida Statutes, because the difference in votes cast between Vern Buchanan and Christine Jennings was less than 1/2 of 1 percent.

18. On November 15, 2006, the Honorable Sue M. Cobb, Secretary of State, released the results of the machine recount and ordered a mandatory manual recount pursuant to Section 102.166(1), Florida Statutes, because the difference in votes cast between Buchanan and Jennings was less than 1/4 of 1 percent. Broken down by county, the recorded vote totals after the machine recount were as follows:

	Buchanan	Jennings
Charlotte:	4,459	4,270
DeSoto:	3,467	3,056
Hardee:	2,628	1,684

Manatee:	50,053	44,365
Sarasota:	58,535	65,366

19. On November 15, 2006, the Secretary of State also reported an “undervote” of 21,303 for the congressional race. The term “undervote” describes a situation in which a voter cast ballots for other candidates or ballot measures but did not register a vote for the particular office. *See* § 97.021(37), Florida Statutes. Broken down by county, the undervote totals were as follows:

Charlotte:	174
DeSoto:	148
Hardee:	277
Manatee:	2,324
Sarasota:	18,380

20. The undervote total for the congressional race in Sarasota County is extremely abnormal in numerous respects, including the following:

a. A total of 88,927 ballots were cast in this race on Election Day in Sarasota County on the electronic voting machines. Christine Jennings received 39,930 votes and Vern Buchanan received 36,619 votes. There were 12,378 undervotes. The undervote rate on Election Day in Sarasota County was therefore an extraordinary 13.9% of the ballots cast on the electronic voting machines.

b. A total of 30,832 ballots were cast during the early-voting process in Sarasota County, on the same type of electronic voting machines. Christine Jennings received 14,509 votes, and Vern Buchanan received 10,890 votes. There were 5,433 undervotes. The undervote rate in the early-voting process in Sarasota County was therefore an extraordinary

17.6% of the ballots cast. And the combined undervote percentage for early and Election Day voting on the electronic voting machines was an equally extraordinary 14.9%.

c. In vivid contrast, of the 22,525 votes cast in this race by absentee ballot in Sarasota County (which were recorded by optical-scanning devices, not by electronic voting machines), Christine Jennings received 10,928 votes, and Vern Buchanan received 11,025 votes, and there were just 571 undervotes recorded -- a rate of only 2.53%, which is consistent with historical norms and expectations.

d. In equally vivid contrast, the percentage of undervotes for the House of Representatives race in other counties within the Thirteenth District did not remotely approach the undervote rates for the electronic voting machines in Sarasota County. The undervote rate for this race was 2.5% in Charlotte County, 2.2% in DeSoto County, 5.3% in Hardee County, and 2.4% in Manatee County. The combined undervote percentage for these four counties is only 2.5% -- one-sixth the undervote percentage recorded in Sarasota County for votes cast on electronic voting machines.

e. In addition, the undervote percentage recorded in Sarasota County for other high-profile races is a small fraction of the 14.9% undervote rate on electronic voting machines for the congressional race. For example, the undervote percentage recorded in Sarasota County for the Governor's race was 1.28% and the undervote percentage for the United States Senator's race was 1.14%.

f. Finally, the percentage of undervotes on electronic voting machines for the congressional contest in Sarasota County in 2006 is almost seven times the rate of undervotes for the Thirteenth District congressional race in 2002 (the last midterm election), which was 2.2%.

21. In 2001, Sarasota County became the first county in Florida to use the iVotronic voting system. They have been used since 2001 in at least 19 separate primary, general, and local elections. In the 2006 election, Sarasota County voters were asked whether to adopt a proposed county charter amendment requiring that as of January 1, 2008, all county voting systems provide a voter-verified paper ballot and that mandatory audits of election results be conducted in every election comparing hand counts to machine counts. The county adopted the proposed charter amendment with the support of 55.4% of voters, indicating that voters themselves have lost confidence that the iVotronic system is capable of correctly recording their votes. Significantly, the undervote rate for this proposed charter amendment was only 6.2%.

22. The statistical evidence alone indicates that the staggeringly large number of undervotes in Sarasota County is due to the malfunctioning of the iVotronic electronic voting machines. In fact, preliminary expert statistical analysis of the reported election results concludes there is little doubt that the use of the iVotronic machines in Sarasota County caused the extraordinarily high rate of undervotes in that county. The fact that undervote rates from the rest of the district and from absentee voters in Sarasota County were so much lower than rates from voters using the iVotronic machines in Sarasota County rules out the possibility that the extraordinarily high Sarasota County undervote rates were caused by factors common throughout the district --- such as voter abstention due to negative campaigning or dissatisfaction with both candidates. Evidence that such alternative explanations were causing high undervote rates would have shown up throughout the district, not in a single county, and not just among one type of voting machine in that county. Additionally, the fact that a higher undervote rate was present on identical electronic voting machines in two different modes of voting that occurred at different times --- early voting (from October 23 to November 5) and Election Day voting (November 7) -

-- creates an overwhelming suspicion that the problems pertain to the use of these electronic machines in Sarasota County.

23. It is extremely unlikely that an undervote rate of the magnitude that occurred in Sarasota County can be principally attributed to voter confusion or ballot design. Even the most egregious examples of voter confusion caused by ballot design in other races do not yield undervote percentages remotely as high as those present in the Thirteenth District congressional race. For example, the infamous "butterfly ballot" used in Palm Beach County, Florida in the 2000 presidential race caused fewer than 1% of the presidential votes cast in that election to be erroneously cast for the independent candidate Pat Buchanan. Moreover, because of pervasive problems with electronic voting machines during early voting in Sarasota County -- widely reported in the press before and on Election Day and in public statements by Sarasota County Supervisor of Elections Kathy Dent -- Sarasota County voters were alert to the risks of ballot confusion, and thus highly unlikely to have fallen victim to it.

24. As powerful as this statistical evidence is, it is far from the only indication that thousands of legal votes in Sarasota County simply were left out of the certified election results for the congressional race because of the failure of electronic voting machines. A variety of contemporaneous sources document widespread problems with the iVotronic electronic voting machines in Sarasota County. These documents, including both the statements of voters and contemporaneous records maintained by the Sarasota County Supervisor of Elections, identify a consistent pattern of voter difficulty in having their votes recorded in the House of Representatives race -- and not in other races on the ballot.

25. Plaintiff has obtained affidavits memorializing the eyewitness accounts of hundreds of Sarasota County voters attesting to their difficulties attempting to cast a vote for

Christine Jennings in early voting and on Election Day on iVotronic electronic voting machines in Sarasota County. The following statements are representative of the memorialized eyewitness accounts of these hundreds of voters:

- “I went through the ballot making my selections on the Ivotronics touch screen voting machine and took my time making sure that I voted in every race. I am certain that I cast a vote for Christine Jennings. When I reviewed the ballot at the end of the voting process, I noted that the race for the 13th congressional district . . . indicated that I had made no selection. I double-touched the 13th Congressional District race and again cast my vote for Christine Jennings. . . . I have more than 15 years experience in selling computer systems, five of those years are in selling touch screen systems. Based on my experience, I believe there was a software bug in the voting machine software causing the software not to register the touch.”
- “I took a sample ballot, which I had previously filled out and my intention to vote in every race. I believed that I voted for Christine Jennings but I came to the review screen it said I had not cast a vote in the Congressional race. . . . I used the back arrow and it took me back to Congressional race and I recorded a vote for Christine Jennings.”

- “When my husband and I voted on the iVotronics touch screen voting machines, I was told by a poll worker to be sure and check the District 13 Congressional race because several voters, even at that early hour, had complained that they had voted for Christine Jennings, but the summary page did not reflect their votes for Christine Jennings.”
- “When I voted on the iVotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it did not show a vote for Christine Jennings or anyone else.”
- “There was no warning or mention of any problems however, I was aware there may be a problem with the Congressional vote based on various media reports. I went through the ballot and specifically remember voting for Christine Jennings. When I arrived at the review screen, there was no candidate selected for the Congressional vote. I called a poll worker over and explained the situation and she told me that I did not ‘press hard enough’ when selecting the vote and I then returned to the vote screen and recast my ballot, I then confirmed it on the review screen.”
- “When I voted on the touch screen voting machine I touched the screen voting for Christine Jennings and when I reached page 15, the summary page, it indicated that I had not voted for Jennings. I immediately called

this to the attention of a poll worker who showed me how to go back and vote for Jennings. I followed her instructions and again voted for Jennings. It did appear on the summary screen this time and I hope was duly registered.”

- “When I voted on the ivotronics touch screen voting machine I touched screen and voted for Christine Jennings for U.S. Congress Florida District 13. When I reviewed my ballot before hitting the red button and actually voting, I saw the review screen did not show a vote for Christine Jennings. I was afraid I would lose my other votes if I tried to go back and correct the problem, so I then went ahead and cast my ballot without confirming that the machine had registered my vote for Christine Jennings.”
- “I attempted to vote for Christine Jennings in the District 13 race and experienced the following difficulties: I was well-aware of the difficulties in the early voting in District 13 race and so I carefully voted in each election on the ballot, including that race. When I got to the review page, my vote for Christine Jennings was not reflected. I called out to a poll worker to alert them that my vote in the District 13 race had not been recorded. The poll worker who came to assist me informed me that the same thing had happened to her when she had voted earlier. She guided me back to the District 13 page and I pressed the touch screen again to reflect my vote for Christine Jennings. The poll worker then guided me

back to the review page where my vote in the District 13 race was reflected and I then pressed the vote button.”

- “When I voted on the ivotronics touch screen voting machine, I went through the ballot to vote. I was being careful because I seemed to have to press hard for my votes to register. In addition, I knew to be careful because my wife had been to vote previously and had overheard some women who had a problem voting discussing their problems with the machines. They were different machines. A neighbor also told me that she had encountered six different people who had a problem with the voting machines. When the review sheet came up it said that I had not voted in the Congressional race even though I knew I had voted for Christine Jennings. I went back and registered my vote again and this time it indicated that I had voted for Ms. Jennings on the review screen.”
- “When I voted with the stylus on the ivotronics touch screen voting machine, I am absolutely sure the box for Christine Jennings showed the X. On the Review screen, however, Christine Jennings’ name showed but the box beside her name was blank. I clicked on the review ballot and corrected my vote and it then showed an X beside her name. After that, I registered my vote with the Red button at the top of the screen. After voting, I asked my husband if anything unusual happened when he voted (on a different machine). He told me that when he reviewed his ballot, the

box by Christine Jennings' name was blank and he had to correct it. At that time, I reported this to a poll worker named Charlie, who said he would report it.

- “I had heard prior to going to the poll that there were problems with the voting machines. When I went to vote, the poll worker also warned me that there had been problems with the machine registering the Congressional race. When I voted on the ivotronics touch screen voting machine, I voted for Christine Jennings. The screen indicated I had voted. Yet when I got to the end, the review page indicated that I had not voted in the Congressional race. I went back and voted for Ms. Jennings. This time my vote did register on the voting page.”
- “When I voted on the iVotronics machine I was being very methodical. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure that the box was checked before I went to the next page. When I got to the review screen it reflected no vote was cast for the Congressional race, but both candidates' names were shown. All of my other selections were properly recorded. I touched where it said no vote had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and carefully rechecked the review page three times. I then pushed the vote button. No report was made to the poll worker. Prior to voting, the poll

worker recommended that I check the review page before casting my final ballot. I am a registered Republican and I believe these machines failed democracy.”

- “I voted on the iVotronics machine I took my time to be sure I did not make any errors. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure the box was checked before I went to the next page. When I got to the review screen it reflected no vote was cast for the Congressional race. All of my other selections were properly recorded. I touched where it said no vote had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and I then pushed the vote button. “
- “When I voted on the ivotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it not only failed to show a vote for Christine Jennings, but the only name to appear on the review page was Christine Jennings, next to a blank box indicating no vote had been cast. I called a poll worker over and explained what had happened and the poll worker pulled back the page for the Congressional race. I revoted for Christine Jennings, and my vote appeared to register in my second review of the summary screen.”

- “When I voted on the touch screen voting machine I encountered two problems with the machine. First, after I had voted for Christine Jennings on the top of the second screen, when I pushed my selection for Jim Davis for Florida Governor next, the “X” on the computer screen came up indicating that I had voted for Charlie Crist. I called a poll worker, advised her of the problem and she showed me how to change my vote to Jim Davis. I then proceeded to vote on every race I saw on the ballot. When I got to the review screen, it showed Christine Jennings name, but unlike all the other names and races on the review screen, there was no X in the box next to Christine Jennings’ name. I am certain that I had initially cast a vote for Christine Jennings as my two main purposes in voting were to vote for Christine Jennings for Congress and Jim Davis for Florida Governor. I again called a poll worker who told me to hold my finger down on the box next to Christine Jennings name on the review screen until the X came up. I did so and then pushed the ‘Vote’ button.”
- “When I arrived at the polls I was warned by a poll worker that some votes from ‘page 2’ were not being registered. I waited on line for 45 minutes to vote and when I returned home, informed my wife of what I had been warned.”
- “I had heard earlier media reports and was aware that there were some problems with the machines. When I arrived, I specifically asked if there

had been problems and I was told no issue or problems had arisen. I voted for Christine Jennings on a touch screen and when I arrived at the review page the Congressional vote was left blank. I called a poll worker over at that time and she showed me how to move back and I re-cast my vote for Christine Jennings. On the final review page, I confirmed my vote was cast. I approached a poll worker to complain about the situation and filled out a complaint card.”

26. These eyewitness accounts, and hundreds of others like them, attest to pervasive difficulties in the recording of votes in the Thirteenth District congressional race. Although many of these voters believed that they were able eventually to overcome the machine difficulties and cast a recorded vote for Plaintiff Christine Jennings, the problems the iVotronic machines exhibited in recording the legal votes of these and thousands of other voters provide substantial grounds for doubting whether the votes were in fact counted. The information voters see on the touch-screen of an electronic voting machine when they cast their votes is stored in the machine’s temporary, volatile computer memory. A permanent record of a vote is made only when -- upon pressing the “Vote” button -- the voter’s recorded preference is transferred from the temporary volatile memory on the computer to permanent nonvolatile memory. If, as the statistical evidence suggests is overwhelmingly likely, a software “bug” or other malfunction disrupts or prevents the transfer of the recorded legal vote from temporary to permanent memory, the voter may well see a vote cast for Jennings on his or her review screen even though no permanent record of the vote is ever recorded.

27. Poll watchers also reported their observations of widespread occurrences of voters being unable to have their votes in the congressional race recorded by iVotronic electronic voting

machines. One poll watcher reported as follows: “There were seven ivotronics touch screen voting machines at the precinct where I was watching the voters. Two of the ivotronics touch screen voting machines stopped working while I was watching the voters. After an hour or so, one was repaired and put back into service. The other was put back into use without repair except that the poll workers instructed voters to hold their finger on the touch screen for more time, rather than just touch [the] screen to get the vote to register. I heard several voters tell poll workers the ivotronics touch screen voting machine was not recording their vote.”

28. Contemporaneous official “Incident Report Forms” of the Sarasota County Supervisor of Elections likewise document widespread occurrences of voters having great difficulty in having the iVotronic electronic voting machines record their votes in the Thirteenth District race. Numerous such forms noted that iVotronic electronic voting machines were “not recording votes.” One report from a particular precinct noted that a “voter voted on screen -- didn’t show up on review . . . asked poll worker for help . . . [c]ancelled ballot and moved to another machine,” and went on to observe “more than one [voter] with trouble on machine.” Another incident report observed that “[e]very other voter is complaining about the Christine Jennings contest not coming up.” Indeed, these incident reports document multiple instances of frustrated voters telling election officials at the polling places that “voting machine[s] would not let her vote for Jennings.”

29. Other contemporaneous official forms maintained by the Sarasota County Supervisor of Elections similarly document that iVotronic electronic voting machines used in the County were not recording the votes that voters had cast. Machines were taken out of service on Election Day because they were “slow to respond to touch” or “required a hard/extended touch before [a] vote was recognized,” or because they were “not recording some votes [and] the

touchscreen was not working properly -- hard to record vote, needed to push hard and juggle to record vote," or because they were "not accepting votes." Technical support personnel reported receiving "several complaints that voters make selections that do not appear on the summary screen" and that "the selection has to be highlighted . . . two or three times before the summary page reflected the suggestions." Other reports indicate that "voters reported making a selection but the selection did not appear on the review screen," requiring further corrective action by the voter, and that particular machines "miss[] selections on some pages." One report by a Sarasota County technical support person indicated that a particular electronic voting machine "will not register votes no matter how hard you press screen."

30. Significantly, the records of the Sarasota County Supervisor of Elections document that election officials were on clear notice, as a result of the extreme difficulties many voters encountered during the early-voting phase, that the iVotronic electronic voting machines were malfunctioning with respect to the Thirteenth District congressional race. Nevertheless, the County election officials do not appear to have taken *any* steps to correct the serious machine problems in advance of Election Day.

31. This machine-induced failure had significant, indeed, determinative, effects on the outcome of the election for the Thirteenth District congressional seat. Preliminary statistical analysis (based on the undervote rates for the election in Sarasota County absentee ballots, and in other counties) indicates that more than 14,000 Sarasota County voters (the differential over and above the expected undervote rate) cast legal ballots but failed to have their legal votes recorded. Given that the certified election results give Defendant Buchanan a lead of only 369 votes, and given that Plaintiff Jennings carried Sarasota County while Defendant Buchanan carried the rest of the district, the failure to include 14,000 or more votes in the final tally places the outcome of

the election into grave doubt. Indeed, preliminary statistical analysis indicates that inclusion of these 14,000 or more Sarasota County votes would change the outcome of the election, because the Sarasota County voters whose votes were recorded in the election favored Plaintiff Christine Jennings by a significant margin.

Count 1

32. Plaintiff realleges paragraphs 1 - 31.

33. As a result of the failure of iVotronic electronic voting machines to record all legal votes cast in the Thirteenth District congressional race in Sarasota County, thousands of votes legally cast in that race were not included in the vote totals certified by the Elections Canvassing Commission on November 20, 2006. The failure to include these votes constitutes a rejection of a number of legal votes sufficient to place in doubt, and likely change, the outcome of the election.

34. Given the extremely narrow margin of 369 votes in the certified election results, it is self-evident that the number of uncounted legal votes in Sarasota (which preliminary statistical analysis reveals to be at least 14,000) is sufficient to place in doubt, and likely change, the outcome of the election.

35. Given the relative percentages of the actual votes cast in Sarasota County in the Thirteenth District election, it is likely that including the uncounted legal votes cast in Sarasota County would change the outcome of the election and result in a victory for Plaintiff Christine Jennings.

36. Therefore, under Section 102.168, Florida Statutes, Plaintiff Christine Jennings is entitled to prevail in this contest action, and should be awarded all appropriate relief.

Prayer for Relief

Wherefore, Plaintiff prays that the Court:

1. Advance this matter on the Court's docket.
2. Order immediate discovery as requested in the accompanying motion, which is necessary to determine conclusively the cause of the massive undervote in Sarasota County.
3. Convene a status conference promptly to establish an expeditious schedule for completing discovery and conducting a hearing.
4. Set this matter for a prompt hearing pursuant to Section 102.168(7), Florida Statutes.
5. Order the Elections Canvassing Commission to declare void the results of the 2006 general election for Representative from Florida's Thirteenth Congressional District.
6. Order the Elections Canvassing Commission to decertify Vern Buchanan as the winner of the 2006 general election for Representative from Florida's Thirteenth Congressional District. *See* Fla. Stat. § 102.1682.
7. Enter a finding that Plaintiff is entitled to the office of Representative from Florida's Thirteenth Congressional District, Section 102.1682, Florida Statutes, or, in the alternative, declare the congressional seat for Florida's Thirteenth Congressional District vacant such that a special election shall take place pursuant to Sections 100.101(1) and 100.111(3), Florida Statutes, or order a new election to determine the winning candidate for the United States House of Representatives seat.
8. Order all other appropriate relief, including an award of fees and costs.

Respectfully submitted this 20th day of November, 2006 by:


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**Declaration of Charles Stewart III on
Excess Undervotes Cast in Sarasota County, Florida
for the 13th Congressional District Race**

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November 20, 2006

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**Declaration of Charles Stewart III on
Excess Undervotes Cast in Sarasota County, Florida
for the 13th Congressional District Race**

I, Charles Stewart III, hereby attest to the following:

Introduction

I have been retained as an expert to analyze the excessive number of undervotes that were cast in Sarasota County, Florida in the 2006 general election for the 13th congressional district. I received a PhD in political science at Stanford University in 1985. I am a tenured professor of political science at the Massachusetts Institute of Technology (MIT), where I am also the head of the Department of Political Science. At MIT I have taught classes on American politics, elections, congressional politics, and statistical methods, at both the undergraduate and graduate levels. Since early 2001 I have been a participant in the Caltech/MIT Voting Technology Project (VTP), which is an interdisciplinary project to study various aspects of election reform, particularly the role of voting machines in the administration of elections. (From mid-2002 to mid-2003 I was the MIT director of the project.) As part of my involvement with the VTP, I have written about the performance of voting machines, in particular studying the rates of undervotes and overvotes (sometimes called "the residual vote") as a measure of voting machine performance. This research has appeared in peer reviewed journals and reports issued by the VTP. I have helped to organize and have participated in conferences about setting standards for voting machines, voting machine security, election reform, and the detection of fraud in election administration.

Detailed information about my professional background and scholarly activity may be found in my *curriculum vitae*, which I attach to this declaration.

Summary of Key Conclusions

1. **Sarasota County undervote rates for the 13th congressional district race were substantially higher than the undervote rates observed in the other counties that comprise the district.** Various comparisons of the undervote rates that were produced in different counties, on different machines, and under different modes of voting (i.e., absentee voting, early voting, and Election Day voting) lead clearly to the conclusion that these differences were caused by the use of the iVotronic electronic voting machine in Sarasota County. The fact that undervote rates in Sarasota County were so much higher than in the rest of the district allows us to rule out the possibility that Sarasota County's undervote rates were caused by factors such as voter revulsion to a negative campaign or dissatisfaction with both candidates.
2. **The undervote rate in the 13th district was anomalous when compared to other countywide races that were contested in Sarasota County.** The undervote rate for *early voting* in the 13th district race was greater than for any other item on the countywide ballot. The undervote rate for *Election Day voting* exceeded that for most of the items on the countywide ballot. In stark contrast, the undervote rate for *absentee voting* was among the lowest for all countywide races.
3. **The number of excess undervotes caused by the use of the iVotronic machines in Sarasota County was between 13,209 and 14,739 votes.** This estimate was based on a study of the patterns among the undervotes cast on other countywide races in Sarasota County.
4. **The size of the excess undervote in Sarasota County, coupled with the amount of support received by Jennings among ballots actually counted in Sarasota County, make**

it likely that had the electronic machines not malfunctioned, Jennings would have won the election by at least 739 votes, and possibly by as many as 825 votes. This analysis is based on two methods, one that takes Sarasota County as a single unit, and another that simulates the allocation of the excess undervote to Jennings and Buchanan on a precinct-by-precinct basis.

5. **The level of undervoting experienced using electronic voting machines in Sarasota County for the 13th congressional district greatly exceeds the undervote rates that were estimated to have occurred in other well-established cases of voter confusion.** This suggests a substantial possibility that the exaggerated undervote rates in Sarasota County were not solely due to voter confusion, but also caused by factors related to machine malfunction.

Background Information

The 13th U.S. House District of Florida (henceforth “the 13th district”) consists of all of DeSoto, Hardee, and Sarasota counties, along with portions of Charlotte and Manatee counties. After a manual recount of the race, Vern Buchanan has been declared the winner over Christine Jennings by a margin of 369 votes.¹ The election returns by county are reported in Table 1. Sarasota County, where the undervote anomalies occurred, gave Jennings a 5.6% point margin over Buchanan (52.8% vs. 47.2%) among all ballots that were counted.

¹ Stephen Majors, “Manual recount ends, leaving Buchanan leading Jennings,” Associated Press State and Local Wire, November 18, 2006, accessed via LexisNexis; Jeremy Wallace, “Buchanan wins district 13 recount; legal action looms,” heraltribune.com, November 18, 2006.

Table 1. Election returns in the 13th congressional district, by county.

County	Jennings	Buchanan
Charlotte	4,270 (48.9%)	4,459 (51.1%)
DeSoto	3,056 (46.8%)	3,467 (53.2%)
Hardee	1,684 (39.1%)	2,628 (60.9%)
Manatee	44,365 (47.0%)	50,053 (53.0%)
Sarasota	65,366 (52.8%)	58,535 (47.2%)
Total	118,741 (49.9%)	119,142 (50.1%)

Source: Florida Secretary of State, Division of Elections,
<http://election.dos.state.fl.us/elections/resultsarchive/enight.asp>, last accessed 11/19/2006,
 9:14am.

The counties cast their ballots using a variety of methods. These methods are summarized in Table 2. Sarasota County used the ES&S Model 650 optical scanner to count paper absentee ballots and the ES&S iVotronic direct recording electronic device to record votes cast during early voting and on Election Day.

Table 2. Voting technologies used in the counties comprising the 13th congressional district.

County	Absentee tabulation equipment	Precinct tabulation equipment	Precinct accessible equipment
Charlotte	ES&S Model 650	ES&S iVotronic	ES&S iVotronic
DeSoto	Diebold AccuVote OS	Diebold AccuVote OS	Diebold AccuVote TSx
Hardee	Diebold AccuVote OS	Diebold AccuVote OS	Diebold AccuVote TSx
Manatee	Diebold AccuVote OS	Diebold AccuVote OS	Diebold AccuVote TSx
Sarasota	ES&S Model 650	ES&S iVotronic	ES&S iVotronic

Source: Florida Department of State, Division of Elections,
<http://election.dos.state.fl.us/votemeth/systems/countsys.asp>, last accessed 11/19/2006, 9:47am.

Definitions:

Diebold AccuVote OS: optical scanner of paper ballots
 Diebold AccuVote TSx: direct recording electronic voting machine
 ES&S iVotronic: direct recording electronic voting machine
 ES&S Model 650: optical scanner of paper ballots

The closeness of the original tally triggered, first, the provisions of Florida's automatic machine recount law and then, second, the manual recount of overvotes and undervotes. These two recounts together have led to only trivial changes over the original unofficial counts that were released immediately after Election Day.² This fact is important for the analysis contained in this declaration because some of the evidence that suggests serious voting machine problems in Sarasota County relies on reviewing detailed election returns, such as election returns that are reported at the precinct level and that separate out voting that happened in three separate phases — early voting, absentee voting, and Election Day voting.

Only Charlotte County has yet released on the Web precinct-level election returns that reflect the two rounds of recounts. However, there is every indication that the detailed unofficial precinct reports that were released immediately after Election Day match almost precisely the

² Phil Long, Marc Caputo, and Jack Dolan, "Florida begins 'meaningless ritual' of vote recount," *Miami Herald*, Nov. 16, 2006, via LexisNexis; "FL13: Judge delays audit of undervotes," *The Frontrunner*, via LexisNexis; Nicholas Azzasa, "Jennings picks up six votes, but still trails Buchanan," *Bradenton Herald*, Nov. 17, 2006, via LexisNexis.

detailed information at the precinct level following the two rounds of recounts. Therefore, for the remainder of this declaration, I make use of the details provided in the unofficial returns that were released immediately after Election Day, unless I indicate otherwise.

Comparisons within the 13th Congressional District

Summary: Sarasota County undervote rates for the 13th district race were substantially higher than the undervote rates cast in the other counties that comprise the district.

The unofficial returns reported a very high undervote rate among ballots cast in Sarasota County for the 13th congressional district. (An “undervote rate” is defined as the percentage of all ballots cast that did not record a vote for either 13th congressional district candidate. It is calculated by dividing the number of undervotes by the total number of votes cast.) Table 3 reports these undervote rates in tabular form. The total undervote rate in the district was 8.2% of the 259,171 ballots that were cast.

Table 3. Undervote rates, by county, in the 13th congressional district.

County	Ballots cast absentee		Ballots cast early		Ballots cast on Election Day		All ballots cast	
	Number cast	Percent undervote	Number cast	Percent undervote	Number cast	Percent undervote	Number cast	Percent undervote
Charlotte ^a	1,636	3.1%	3,040	2.3%	4,280	2.4%	8,962 ^a	2.5%
DeSoto							6,665	2.1%
Hardee							4,555	5.3%
Manatee							96,705	2.4%
Sarasota	22,525	2.5%	30,832	17.6%	88,927	13.9%	142,284	12.9%
Total							259,171	8.2%
Total, without Sarasota							116,887	2.5%

Note: Election returns posted on the Internet from DeSoto, Hardee, and Manatee counties do not break down the returns into the different voting modes (absentee, early voting, and Election Day).

Sources

Charlotte County: Charlotte County Supervisor of Elections, Precinct Report, Official Results, <http://www.charlottevotes.com/Elections/Reports/Gen06summary.HTM>, last accessed 11/19/06, 9:58am.

DeSoto County: Florida Secretary of State, Division of Elections, <http://election.dos.state.fl.us/elections/resultsarchive/enight.asp>, last accessed 11/19/06, 9:46am.

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Manatee County: Manatee County Supervisor of Elections, Election Results, <http://www.votemanatee.com/results.asp?dateid=55&ocode=30&office=Rep%20Congress%20Dist%2013>, last accessed 11/19/06, 10:09am.

Sarasota County: Sarasota county Supervisor of Elections, Summary Report, Unofficial Results, <http://www.srqelections.com/results/gen2006sum.htm>, last accessed 11/19/06, 10:12am.

^aCharlotte County reported 6 provisional ballots in the official results. None of these contained an undervote.

The Sarasota County undervote rate in the 13th district was 12.9%. This was considerably higher than the undervote rates for the four other counties that comprise the district. The undervote rates in the other counties were as follows: Charlotte, 2.5%; DeSoto, 2.1%; Hardee, 5.3%; and Manatee, 2.4%. The combined undervote rate of these four counties (adding all the undervotes together and dividing by the total number of votes cast) was 2.5%.

The difference in the undervote rate between Sarasota County and all the other counties in the district was 10.4%.

The undervote rates *within Sarasota County* for early voting (17.6%) and Election Day voting (13.9%) were substantially higher than for absentee ballots (2.5%). Both early voting and Election Day voting were conducted using the iVotronic touch screen voting system; absentee ballots were cast using optically scanned paper ballots.

Absentee ballots and the early votes were cast during the same approximate time span. The only difference is the voting technology used to record and count these two types of ballots — absentee votes were cast on paper ballots and early votes were cast on electronic voting machines. Therefore, it is reasonable to conclude that the difference in the undervote rates between these two voting modes was caused by the use of different voting machines.

Because the undervote rates in Sarasota County among early votes and Election Day votes are similar, standing in stark contrast with the absentee undervote rates, it is also reasonable to conclude that the higher undervote rates among the early votes and the Election Day votes were caused by the use of the iVotronic electronic voting machines.

Another telling contrast contained in Table 3 is between Charlotte County and Sarasota County. Both counties used the same iVotronic machine for early voting and Election Day voting. Within Charlotte County itself, the undervote rates across the three modes of voting ---

absentee, early and Election Day --- were much more consistent with each other, compared to Sarasota County. In Charlotte County the undervote rates were as follows: absentee, 3.1%; early voting, 2.3%; and Election Day voting, 2.4%. The comparable Sarasota county undervote rates were as follows: absentee, 2.5%, early voting, 17.6%, and Election Day voting, 13.9%

Furthermore, the difference in the absentee undervote rates between Charlotte and Sarasota counties is small (0.6% higher in Charlotte) and is statistically insignificant at conventional levels.³ On the other hand, the undervote rates in Sarasota County were substantially higher than in Charlotte for both early voting (by 15.3% points) and Election Day voting (by 11.5% points). These differences are substantial, both in a substantive sense and a statistical sense.⁴

These differences are so large that there is 1 chance in 100 million that a difference this large in undervote rates among the *early votes* could have happened by chance; there is 1 chance in 5 million that a difference this large in undervote rates among *Election Day votes* could have happened by chance.

Taken as a whole, there can be no doubt that the use of iVotronic machines in Sarasota County caused an excess number of undervotes to appear in that county. The iVotronic machines caused the higher rates in both the early voting setting and on Election Day.

The fact that undervote rates in Sarasota County were so much higher than in the rest of the district allows us to rule out the possibility that Sarasota County's undervote rates were caused by other factors that influenced voter behavior throughout the district --- such as voter

³ The standard statistical test to judge the probability that two means are equal is the *t*-test. The *t*-statistic in this case is 0.65, which is associated with a *p*-value of .6513. (The comparison being made here is between the average undervote rates in each precinct in Charlotte County compared to each precinct in Sarasota County.) A common interpretation of this *p*-value is that there is a 65.13% chance that if the absentee undervote rates were equal in the two counties, a difference of this magnitude would be produced by pure chance.

⁴ The *t*-statistics that evaluate the probability that these differences are due to chance are 6.02, for early voting, and 5.41, for Election Day voting. The *p*-values associated with these statistics are .00000001 and .0000002, respectively.

revulsion to a negative campaign or dissatisfaction with both candidates. Evidence that such alternative explanations were causing high undervote rates would have shown up throughout the district, not just in a single county, and not just in one type of voting machine in one county.

There is no doubt that the use of the iVotronic machines caused the extraordinarily high rate of undervotes in Sarasota County.

Comparisons within Sarasota County

Summary: The undervote rate in the 13th district was anomalous when compared to other countywide races that were contested in the county.

The overall pattern of election returns *within Sarasota County* provides further compelling evidence that the pattern of excess undervotes was confined to voting on the 13th congressional district race. This is illustrated in Table 4, which reports the undervote rates for all races that appeared on all ballots in the county. (Races that were excluded are those that were only on some ballots within the county, such as the Venice city elections.)

Table 4. Undervote rates in Sarasota County among all county-wide races on the ballot.

	Undervote rate			
	Absentee	Early voting	Election Day	Total
Federal and stateside offices				
U.S. senator	1.0%	0.8%	1.3%	1.1%
13th congressional district	2.5%	17.6%	13.9%	12.9%
Governor & Lt. governor	0.7%	1.3%	1.4%	1.3%
Attorney general	2.6%	4.4%	4.8%	4.4%
Chief financial officer	4.0%	4.0%	4.7%	4.4%
Commissioner of Agriculture	4.9%	4.9%	5.4%	5.2%
Charter Review Board members				
District 1	10.2%	8.1%	9.2%	9.1%
District 2	16.2%	17.0%	16.6%	16.6%
District 3	11.8%	8.8%	9.9%	10.0%
District 4	12.1%	8.8%	10.1%	10.1%
District 5	11.7%	8.5%	9.9%	9.8%
Hospital Board member				
Southern District Seat I	10.6%	8.9%	10.1%	9.9%
Judicial retention votes				
Justice Lewis	21.3%	15.3%	16.4%	16.9%
Justice Pariente	21.1%	14.9%	16.1%	16.7%
Justice Quince	21.3%	15.9%	17.3%	17.7%
Judge Casanueva	23.2%	17.0%	18.6%	19.0%
Judge Davis, Jr.	23.1%	16.7%	18.2%	18.6%
Judge Larose	23.2%	17.0%	18.6%	18.9%
Judge Salcines	24.2%	17.5%	19.1%	19.6%
Judge Stringer, Sr.	24.6%	17.3%	18.9%	19.5%
Circuit Judge election				
12th circuit, group 21	20.2%	15.2%	15.4%	16.1%
Constitutional amendments				
Amendment 1	14.0%	8.5%	10.2%	10.4%
Amendment 3	7.4%	5.0%	5.8%	5.9%
Amendment 4	6.8%	3.9%	4.5%	4.7%
Amendment 6	5.5%	2.5%	3.1%	3.4%
Amendment 7	7.0%	3.9%	4.9%	5.0%
Amendment 8	9.8%	6.1%	8.0%	7.9%
County charter amendment				
County charter amendment	7.7%	4.8%	6.4%	6.2%

Presented in the order in which they appeared on the ballot.

Source: Sarasota county Supervisor of Elections, Summary Report, Unofficial Results, <http://www.sr elections.com/results/gen2006sum.htm>, last accessed 11/19/06, 10:20am.

The undervote rate for the 13th congressional district in Sarasota County is vastly out of proportion to the undervote rates for the other prominent federal and state offices that were at the “top of the ballot” in 2006. The undervote rate for the 13th congressional district was 12.9%, compared to the following undervote rates for the other statewide offices: U.S. senator, 1.1%; governor, 1.3%; attorney general, 4.4%; chief financial officer, 4.4%; and commissioner of agriculture, 5.2%.

Examining the undervote rates of the three different modes of voting --- absentee, early, and Election Day --- we see that the anomalous number of undervotes in the 13th congressional district only appears in voting modes that used the iVotronic machines. The absentee undervote rate for the 13th congressional district, 2.5%, is entirely consistent with the absentee undervote rates for all of these other prominent races. These other undervote rates were as follows: U.S. senator, 1.0%; governor, 0.7%; attorney general, 2.6%; chief financial officer, 4.0%; and commissioner of agriculture, 4.9%.

On the other hand, the early voting undervote rate for the 13th congressional district was 17.6%. This contrasts significantly with the race for U.S. senator (0.8%), governor (1.3%), attorney general (4.4%), chief financial officer (4.0%), and commissioner of agriculture (4.9%). A very similar pattern emerges when we compare the 13th congressional district to these other races on Election Day.

Only one other race on the whole countywide ballot appears, at first look, to be as anomalous as the 13th district congressional race. This is the Charter Review Board (CRB) District Seat 2, which had an overall undervote rate that was 6.5% points higher than CRB Seat 4, which had the second-highest undervote rate among Charter Review Board seats. A review of the sample countywide ballot reveals that Seat 2 was the only one without two major-party

candidates running.⁵ Seats 1, 3, 4, and 5 were contested by two candidates, a Republican and Democrat. Seat 2 was contested by a Republican and a nonpartisan candidate. Because political party is a strong voting cue for many voters who cast ballots in low-profile races, it is safe to assume that the undervote rate for the CRB Seat 2 was due to the lack of two major-party candidates, not the electronic voting machines. This assumption is confirmed by observing that the undervote rate among *paper absentee ballots* for CRB Seat 2 (16.2%) was also much higher than the other CRB seats. In other words, the undervote rate for the CRB Seat 2 was high regardless of the mode of voting, which is quite different from the 13th congressional district race.

The overall pattern of the undervote rates presented in Table 4 underscores just how anomalous the pattern of undervotes in the 13th district race was as follow:

1. The undervote rate for *early voting* in the 13th district race was greater than for *any other item* on the countywide ballot.
2. The undervote rate on *Election Day* for the 13th district race exceeded that of all the Charter Review Board seats that had two major-party candidates, exceeded the undervote rates for all the state constitutional amendments and the county charter amendment, and was nearly as high as the undervote rates of the judicial retentions.
3. In stark contract, the undervote rate among *absentee ballots* for the 13th district race was among the *lowest* of all races on the countywide ballot. Only the undervote rates for U.S. senator and governor were lower; the absentee undervote rate for *every other countywide race* was higher.

⁵ Sarasota County Supervisor of Elections, "Official Sample Ballot General Election, November 7, 2006." <http://www.srgelections.com/SampleBallots/sample%20ballot%20general%202006.pdf>, last accessed 11/19/06, 3:34pm.

Calculating the Number of Excess Undervotes in Sarasota County

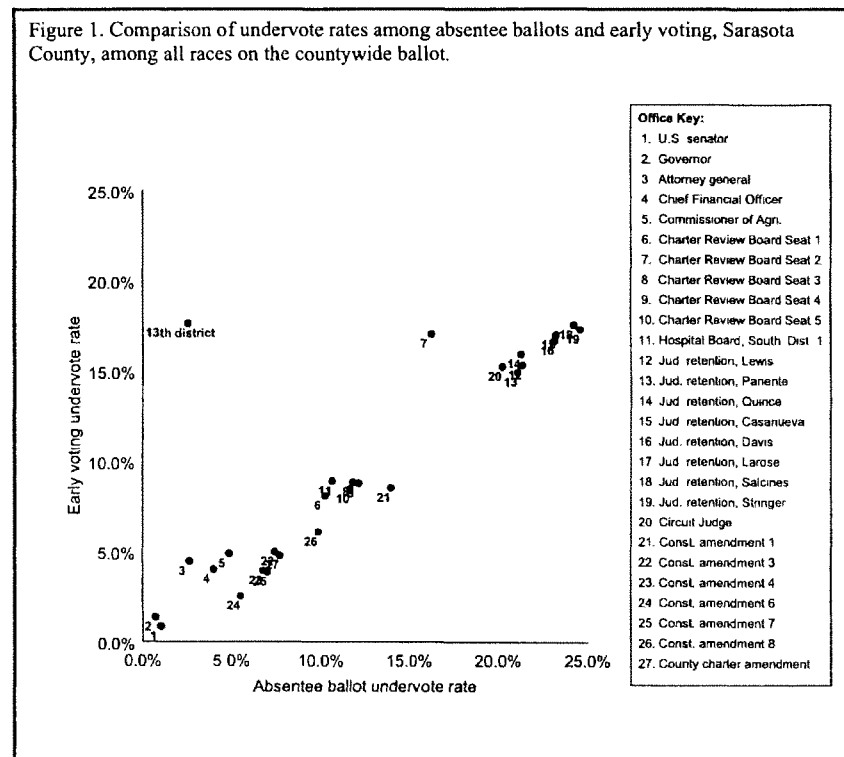
Summary: Taking into account the undervote rate among the absentee ballots cast in the 13th district, we can estimate that the number of *excess undervotes* that were created in the 13th congressional district race because of problems associated with the use of the electronic voting machines ranged between 13,209 and 14,739 votes.

Careful study of the undervote rates for all countywide races reported in Table 4 reveals that the range of undervote rates across offices can be quite high. For instance, the overall undervote rate varied in Sarasota County from 1.1% (U.S. senator) to 19.6% (retaining Judge Salcines). There is similar variability when we focus in on the different types of voting. Undervote rates among absentee ballots ranged from 0.7% (governor) to 24.6% (retaining Judge Stringer); among early votes they ranged from 0.8% (U.S. senator) to 17.6% (13th congressional district); and on Election Day they ranged from 1.3% (U.S. senator) to 19.1% (retaining Judge Salcines).

As a general matter, offices that produce a low undervote rate among absentee ballots will also produce low undervote rates in early voting and Election Day voting. The converse is usually also true --- offices that produce a high undervote rate in one form of voting (absentee, early, or Election Day) will tend to produce high undervote rates in all the other forms of voting. Using a statistical term, we can say that the undervote rates cast among absentee ballots are usually highly *correlated* with the undervote rates cast among early votes and Election Day votes.

In Figure 1 I have illustrated the high degree of correlation in the undervote rates among different modes of voting in Sarasota by graphing the data that appear in Table 4. The horizontal axis measures the undervote rate among absentee ballots for all the countywide races. The vertical axis measures the undervote rate during early voting among all countywide races. The

data points represent all of the countywide races that are reported in Table 4. The data points are labeled with a number that corresponds with the key to the right of the graph. The data point for the 13th congressional district is labeled directly.



The data points in the Figure 1 graph line up almost perfectly along a straight line. There are only two exceptions: (1) the 13th congressional district race and (2) the Charter Review Board Seat 2. With the exception of these two races, it is possible to predict with a high degree of accuracy the undervote rate for a countywide race *in the early voting* if one knows the

undervote rate among *the absentee ballots*. In other words, there is a high degree of correlation between these two undervote rates, when viewed on a race-by-race basis.

The most common method used to make this sort of prediction is a statistical technique called linear regression. Using linear regression, we can draw a unique line through all of the data points in Figure 1 that “best” fits through all the data.⁶ I have reported the results of such a regression procedure, for the Figure 1 data, in Table 5. Because the 13th congressional district race and the CRB Seat 2 race are known to be anomalous, it is possible to conduct this procedure by excluding these two races. I have also reported the results after excluding these two races, in the second column of Table 5.

⁶ The criterion for determining what constitutes the “best fit” of a line through a series of data points is a basic topic in statistics textbooks used in the social and natural science. The criterion is to find the line that minimizes the sum of the squared distance between the estimated line and all of the data points.

Table 5. Regression predicting the early vote undervote rate in Sarasota County, using the absentee ballot undervote rate. (Data are displayed in Figure 1; standard errors are in parentheses)

Variable	Including all countywide races	Excluding 13th district and CRB Seat 2
Absentee ballot undervote rate	0.627 (0.077) $t=8.11$ $p=1.37 \times 10^{-8}$	0.706 (0.024) $t=29.65$ $p=2.02 \times 10^{-20}$
Intercept	0.020 (0.011) $t=1.77$ $p=.089$	0.0028 (0.0035) $t=0.80$ $p=.431$
N	28	26
R ²	.72	.97
Standard error of the regression	.032	0.0095

The coefficients reported in Table 5 tell us how to predict the undervote rate for early voting in a race if we know the undervote rate among absentee ballots in that race. Using all of the data, the predicted undervote rate for early voting is equal to

$$0.020 + 0.627 \times \text{Absentee undervote rate} \quad (\text{Equation 1})$$

The numbers in parentheses in Table 5, which are called standard errors, measure how precisely we have estimated the coefficients. The ratio of the coefficient to the standard error produces a test statistic called the *t-statistic*, which can be used to quantify how likely it is that we would have gotten this coefficient if, *in fact*, there was *no* relationship between the undervote rates cast among the absentee ballots and the early vote. Sometimes this is interpreted as quantifying how likely it is that the observed relationship happened due to chance alone.

Using all the data together, the chance that there is really no relationship between these two undervote measures is less than 1-in-100 million.

The R^2 in Table 5 statistic is a summary measure of the degree to which the observed data actually array themselves along a straight line. A perfect line would produce an R^2 value of exactly 1. Perfectly random data would produce an R^2 value of exactly 0. The R^2 value of .72 in the first column of Table 5, which describes the degree to which all of the data in Figure 1 fit along a straight line, is generally regarded as a “high” correlation in the social sciences.

The regression described in the second column of Table 5 excludes the two anomalous cases in the county, estimating this relationship using races that are more typical. Because this analysis excludes two clear outliers, all of the measures of “goodness of fit,” such as R^2 , are even higher. The t -statistic for the slope coefficient is higher in Column 2 (29.3 vs. 7.88) and the R^2 is approaching 1 (.97). Excluding the two atypical cases, the predicted undervote rate for early voting is equal to

$$0.0028 + 0.706 \times \text{Absentee undervote rate} \quad (\text{Equation 2})$$

We can use *either* of these two prediction lines to quantify the degree to which the undervotes in the early voting were excessive. The procedure can be described as follows:

- Using either Equation 1 or Equation 2, substitute in the *known* absentee undervote rate for the 13th congressional district, and calculate the predicted undervote rate for early voting.
- Subtract this predicted undervote rate for early voting from the actual, observed undervote rate for early voting. This is the estimate of the *excess undervote rate* for early voting. (In statistics, this value is generally known as the *residual*.)

Using Equation 1, the expected undervote rate for the early voting was approximately 3.6%⁷ and the estimated *excess undervote rate* for early voting was 14.0%.⁸ Using Equation 2, the expected undervote rate for early voting was approximately 2.1%⁹ and the estimated excess undervote rate for early voting was 15.5%.¹⁰

Taking into account the undervote rate among the absentee ballots, the excess undervote rate in the 13th district among the early votes was in the range of between 14.0% and 15.5%.

There were a total of 30,832 early votes cast in Sarasota County. If we multiply either of these two estimates of the excess undervote rate by the total number of early votes, we can calculate the *total number of excess undervotes among the early votes* in Sarasota County. Those numbers are 4,316 if we use the 14.0% figure and 4,779 if we use the 15.5% figure.

In other words, *the number of votes lost during early voting because of problems associated with the electronic voting machines was between 4,316 and 4,779.*

The same procedure can be used to predict the number of excess undervotes on *Election Day*, based on the undervote rate among the absentee ballots. The procedure is identical to the one I have just described, so I will not repeat the details again of how the estimates are calculated.

Figure 2 shows the data. The horizontal axis records the undervote rate among absentee ballots for all countywide races in Sarasota County; the vertical axis records the undervote rate on Election Day in Sarasota County. The key to the graph is the same as in Figure 1.

⁷ The calculation is as follows: Substituting the observed undervote rate among absentee ballots in the 13th congressional district into Equation 1, we have

$$0.020 + 0.627 \times .025 = 0.0357, \text{ or } 3.57\%$$

⁸ This is calculated as follows: The observed undervote rate for early voting in the 13th congressional district was 17.6%. $17.6\% - 3.6\% = 14.0\%$.

⁹ The calculation is as follows: Substituting the observed undervote rate among absentee ballots in the 13th congressional district into Equation 2, we have

$$0.0028 + 0.706 \times .025 = 0.0205, \text{ or } 2.05\%$$

¹⁰ This is calculated as follows: The observed undervote rate for early voting in the 13th congressional district was 17.6%. $17.6\% - 2.1\% = 15.5\%$

Figure 2. Comparison of undervote rates among absentee ballots and Election Day voting, Sarasota County, among all races on the countywide ballot.

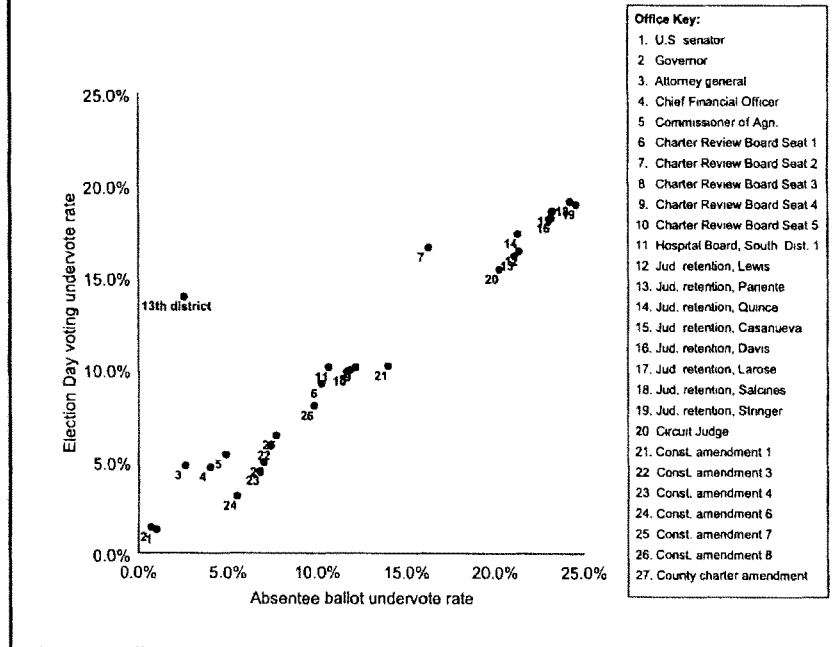


Table 6 reports the results of regressions to predict the undervote rate on Election Day, using the undervote rate among the absentee ballots. The first column reports the results using all the countywide races; the second column reports the results excluding the two anomalous races (the 13th congressional district and CRB Seat 2).

Table 6. Regression predicting the Election Day undervote rate in Sarasota County, using the absentee ballot undervote rate. (Data are displayed in Figure 2; standard errors are in parentheses)

Variable	Including all countywide races	Excluding 13th district and CRB seat 2
Absentee ballot undervote rate	0.688 (0.057) $t=12.15$ $p=5.50 \times 10^{-12}$	0.744 (0.021) $t=34.68$ $p=5.12 \times 10^{-22}$
Intercept	0.021 (0.0083) $t=2.52$ $p<.018$	0.0086 (0.0032) $t=2.68$ $p<.013$
N	28	26
R ²	.85	.98
Standard error of the regression	.0234	.0086

Column 1 of Table 6 provides the coefficients we need to calculate our prediction of the percentage of undervotes on Election Day, as a function of the absentee vote undervote rate. These coefficients produce the following equation for the predicted value of the Election Day undervote rate:

$$0.021 + 0.688 \times \text{Absentee undervote rate} \quad (\text{Equation 3})$$

Equation 3 yields a prediction for the undervote rate in the 13th congressional district of 3.9%.¹¹

Column 2 of Table 6 provides the coefficients we need to calculate our prediction of the percentage of undervotes on Election Day, as a function of the absentee vote undervote rate, this

¹¹ The calculation is as follows: Substituting the observed undervote rate among absentee ballots in the 13th congressional district into Equation 1, we have
 $0.0021 + 0.688 \times .025 = 0.0392$, or 3.92%

time excluding the two anomalous races. These coefficients produce the following equation for the predicted value of the Election Day undervote rate:

$$0.0086 + 0.744 \times \text{Absentee undervote rate} \quad (\text{Equation 4})$$

Equation 4 yields a prediction for the undervote rate in the 13th congressional district of 2.7%.¹²

Using Equation 3, the expected undervote rate for Election Day is approximately 3.9% and the estimated *excess undervote rate* for early voting is 10.0%.¹³ Using Equation 4, the expected undervote rate for Election Day was approximately 2.7% and the estimated excess undervote rate for early voting was 11.2%.¹⁴

Taking into account the undervote rate among the absentee ballots, the excess undervote rate in the 13th district among on Election Day was in the range of between 10.0% and 11.2%.

There were a total of 88,927 Election Day votes cast in Sarasota County. If we multiply either of these two estimates of the excess undervote rate on Election Day by the total number of Election Day votes, we can calculate the *total number of excess undervotes among the Election Day votes* in Sarasota County. Those numbers are 8,893 if we use the 10.0% figure and 9,960 if we use the 11.2% figure.

In other words, *the number of votes lost on Election Day because of problems associated with the electronic voting machines was between 8,893 and 9,960.*

Combining the two sets of estimations together ---- the estimation of the excess undervote rate during early voting and on Election Day --- *I estimate that the excess undervotes*

¹² The calculation is as follows: Substituting the observed undervote rate among absentee ballots in the 13th congressional district into Equation 1, we have

$$0.0086 + 0.744 \times .025 = 0.0272, \text{ or } 2.72\%$$

¹³ This is calculated as follows: The observed undervote rate for Election Day in the 13th congressional district was 13.9%. $13.9\% - 3.9\% = 10.0\%$.

¹⁴ This is calculated as follows: The observed undervote rate for Election Day in the 13th congressional district was 13.9%. $13.9\% - 2.7\% = 11.2\%$

that were cast in the 13th congressional district race because of problems associated with the use of the electronic voting machines ranged between 13,209 and 14,739 votes. In other words, between 73% and 82% of the 18,000 undervotes cast in Sarasota County in the 13th congressional district race were cast by voters who intended to vote in the congressional race.

A large number of votes were lost in Sarasota County because of problems associated with electronic voting machines used in the early voting phase and on Election Day. That number may be as high as 14,739 votes. We can rule out alternative explanations as major causes of these extraordinary numbers through the comparisons we can make --- comparisons *between* Sarasota County and other counties in the congressional district *plus* comparisons we can make *within* Sarasota County.

- No other county had the same undervote levels as Sarasota County, which rules out the counter-argument that the undervotes were due to district-wide disgust with the tenor of the race.
- Votes cast at the same time using different methods --- i.e., absentee voting using paper vs. early voting using electronic machines --- yielded substantially different undervote rates. This, too, rules out the alternative explanation that the undervotes were caused by voter disgust.
- Because early voting and Election Day voting happened at different times, using identical voting equipment, and because these electronic forms of voting produced extraordinarily high undervote rates compared to paper ballot absentee, there is strong evidence that the excess undervote problems were caused by the use of these electronic machines in Sarasota County.

**Calculating the Number of Votes Lost to Jennings and Buchanan
Due to Problems with Electronic Voting Machines**

Summary: The size of the excess undervote in Sarasota County, coupled with the size of support received by Jennings among ballots counted in Sarasota County, makes it likely that had the electronic machines not malfunctioned, Jennings would have won the election.

The following question naturally arises: if the excessive number of undervotes *had not occurred* in Sarasota County, how would those votes have been divided between the two candidates in the 13th district congressional race? Systematic methods can be used answer this question. Some are simple, others are more involved. They all produce the same results: Had the excessive number of undervotes not occurred in Sarasota County, Jennings would have won the election. Her margin of victory would have ranged between 157 and 746 votes.

This section reviews two methods we can use to address the consequences of the excessive undervotes. The first method treats Sarasota County as a single unit. The second method uses the information that was reported at the precinct level.

Method 1: Taking Sarasota County as a single unit

One way to approach this question directly is to treat the voters who unintentionally undervoted because of voting machine-related errors as a random sample of everyone who voted in the 2006 general election in Sarasota County. If we do that, then the best estimate of how these voters would have divided their votes between Jennings and Buchanan, in the absence of other information about the characteristics of the voters who left the 13th district race blank, is the actual observed vote share of the candidates in Sarasota County. This was 52.8% for Jennings and 47.2% for Buchanan.

In the previous section of this report I estimated that the *excess undervotes* in Sarasota County for the 13th congressional district was between 13,209 and 14,739 votes. If we allocate these votes to Jennings and Buchanan in proportion to the overall Sarasota County vote, then we can estimate the following:

1. If the excess number of undervotes was 13,209 and if these votes had been divided just as the counted vote in Sarasota County had been divided, then Jennings would have received 6,974 additional votes, Buchanan would have received 6,235 votes, and Jennings would have gained a net of 739 votes. *This exceeds the official margin given to Buchanan (369) by 370 votes.*
2. If the excess number of undervotes was 14,739 and if these votes had been divided just as the counted vote in Sarasota County had been divided, then Jennings would have received 7,782 additional votes, Buchanan would have received 6,957 votes, and Jennings would have gained a net of 825 votes. *This exceeds the official margin given to Buchanan (369) by 456 votes.*

These are what are known as “point estimates.” It is possible to use basic ideas from statistical sampling to see how firm these estimates are, in the face of known sampling uncertainty.

It is well known that whenever we draw a random sample from a population, the characteristics of the *sample* will always vary somewhat from that of the *population*. The size of this variation is very well understood in statistics and is used to construct measures such as the “margin of error” that is commonly reported in public opinion surveys.

Take, as an example, the simple case of a very large urn filled with exactly 50% red balls and 50% blue balls. In this example, let us draw out 100 balls, completely at random. The first time we draw out 100 balls, we are unlikely to get exactly 50 red balls and 50 blue balls --- for instance, we may get 53 red balls and 47 blue balls. The next time we might get 45 red balls and 55 blue balls.

We know that if we repeat this exercise a large number of times, the *average* number of red balls will be 50 and the *average* number of blue balls will be 50. But we also know that most samples will yield some other mix of red and blue balls. In theory, at least, that mix might cover some samples that are only red balls, only blue balls, and every other mix in between.

We also know that the distribution of the number of red and blue balls will follow a very predictable pattern. The variability of the samples that emerge can be described by a measure called the *standard error*, which tells us how wide or narrow the distribution will be. Whenever we are analyzing a proportion (such as the red ball/blue ball example, or election returns), the standard error of the distribution can be calculated as follows:

$$\text{standard error} = \sqrt{\frac{p(1-p)}{n}},$$

where p is the proportion (50% in the red ball/blue ball example) and n is the size of the sample (100 in the example). Using this formula, we can calculate in the red ball/blue ball example that the standard error is 5.0%. Using this standard error, we can then consult a normal distribution table to describe how often we will get mixes of balls within a certain range. For instance, in this example, we know after consulting the normal distribution table that 95% of the time we should

expect to draw a sample of balls that has at least 40 and no fewer than 60 red balls; we should expect 99% of all samples to have at least 35 and no fewer than 65 red balls.¹⁵

Returning to the 13th congressional district race: if we were to take a random sample of general election voters in Sarasota County of size 14,000 --- roughly half-way in the middle of the estimate of how many excess undervotes there were --- the standard error of that sample would be:

$$\sqrt{\frac{0.528(1-0.528)}{14,000}} = 0.0042,$$

or 0.42%. Consulting a normal distribution table, we can calculate that 95% of all random samples of 2006 general election voters in Sarasota County that contained 14,000 voters would produce vote rates for Jennings of between 52.0% and 53.6% of the vote.¹⁶

We are now in a position to estimate the number of votes that would have been added to the Jennings and Buchanan tallies in Sarasota County had there not been an excess of undervotes among the electronic voting machines. For this calculation, we need to specify the *size of the excess undervote* we will use and the *fraction of support for Jennings* that would be revealed among these voters.

For starters, I begin with mid-point estimates of these two numbers. That is, I assume that the size of the excess undervote was 13,884 (half-way between 13,148 and 14,619) and that the fraction of support for Jennings was 52.8% (i.e., the actual general election results for Sarasota County).

¹⁵ This calculation is based on the fact that 95% of the normal curve lies within ± 2 standard errors; 99% of the normal curve lies within ± 3 standard errors.

¹⁶ Recalling that 95% of all samples will fall within ± 2 standard errors, then the lower bound is calculated as follows: $0.528 - 2 \times 0.004 = 0.520$, or 52.0%. The upper bound is calculated as follows: $0.528 + 2 \times 0.004 = 0.536$, or 53.6%.

- The number of votes received by Jennings among the excess undervotes would be $0.528 \times 13,884 = 7,331$.
- The number of votes received by Buchanan would be $13,884 - 7,331 = 6,552$.
- The net gain in votes for Jennings would be $7,331 - 6,552 = 779$.

Under this middle-of-the-road scenario, Jennings would win the election by 410 votes, that is, $779 - 369$.

I have done a series of calculations for nine different scenarios and reported the results in Table 7. The scenarios vary the fraction of the assumed Jennings vote from a low of 52.0% to a high of 53.6% and vary the excess undervotes from 13,148 to 14,619.¹⁷

Table 7. Different scenarios estimating the Jennings/Buchanan vote among the excess undervotes in Sarasota County.

	Jennings share of the vote		
	52.0%	52.8%	53.6%
Estimated number of undervotes	13,148	13,148	13,148
Jennings votes	6,837	6,942	7,047
Buchanan votes	6,311	6,206	6,101
Net gain for Jennings	526	736	947
Victory margin for Jennings	157	367	578
Estimated number of undervotes	13,883	13,883	13,883
Jennings votes	7,220	7,331	7,442
Buchanan votes	6,664	6,553	6,442
Net gain for Jennings	555	778	1,000
Victory margin for Jennings	186	409	631
Estimated number of undervotes	14,619	14,619	14,619
Jennings votes	7,602	7,719	7,836
Buchanan votes	7,017	6,900	6,783
Net gain for Jennings	585	819	1,053
Victory margin for Jennings	216	450	684

¹⁷ The fraction of the Jennings vote is varied to range between a minimum that is 2 standard errors below the actual Jennings vote to a maximum that is 2 standard errors above the actual Jennings vote. The excess undervotes are varied between the lower and upper bound estimates previously developed for the number of excess undervotes in the county.

Under the least favorable scenario to the Jennings position, she still comes out ahead in the race by 157 votes. In the most favorable scenario, she wins by 684 votes. The middle-of-the-road scenario estimates a 409-vote Jennings victory.

Therefore, if we treat the voters caught up in the excess undervote as a random sample of all Sarasota County general election voters, Christine Jennings would have picked up a sufficient number of additional votes *in all scenarios* to change the outcome of the election.

Method 2: Conducting simulations using precinct-level voting returns

We can reproduce this analysis by moving this set of calculations down to a precinct-by-precinct basis. That is, it is possible to use the precinct election returns to calculate the excess undervote *in each precinct* and then to treat the voters caught up in the excess undervote as a random sample *of the precinct*. We can then multiply the estimated number of excess undervotes *in the precinct* by the vote for Jennings *in the precinct* to calculate the additional votes that she would have received, had the excess undervote not occurred. We can then subtract this number from the total excess undervote in the precinct to calculate the additional votes that Buchanan would have received in the precinct.

Subtracting the additional Buchanan vote from the additional Jennings vote produces an estimate of the net change in the Jennings margin *in that precinct*. Because some precincts gave a majority of their votes to Jennings while others gave a majority of their votes to Buchanan, it is possible that some precincts will show a net shift of support in favor of Jennings while others will shift in favor of Buchanan. To calculate the net shift in support for Jennings in the entire county, we simply add together all the corresponding precinct shifts.

To further add realism to this simulation, we can separate out votes cast early from those cast on Election Day and treat the undervotes as coming from a random sample of all voters *in that precinct* who cast a ballot using the same mode of voting --- early or Election Day. It is reasonable to treat early voting and Election Day voting as separate populations since the level of support garnered by Jennings in each of these voting modes was different --- Jennings received 57.1% of the Sarasota County early vote and 52.2% of the Election Day vote.

Therefore, for each precinct in Sarasota County, I must estimate the following:

- the number of excess undervotes among the early votes;
- the number of excess undervotes among the Election Day votes;
- the percentage of the early voters who supported Jennings; and
- the percentage of the Election Day voters who supported Jennings.

I used three different methods to calculate the number of excess undervotes among the early vote and Election Day vote:

1. Assume that if the excess undervote had not occurred, then the undervote rate for early voting would have been 82% of the absentee undervote rate, and the undervote rate of Election Day voting would have been 92% of the absentee undervote rate. These two figures, 82% and 92%, were chosen because they are the actual average relationship (among all countywide offices) between the early vote undervote rate and the absentee undervote rate, on the one hand, and the Election Day undervote rate and the absentee undervote rate, on the other.
2. Assume that the correct undervote rate for early and Election Day voting is *equal* to that of the absentee ballot undervote rate. This is a more conservative assumption than Assumption # 1, with respect to the Jennings position.

3. Assume that the correct undervote rate for early and Election Day voting is equal to *twice* that of the absentee ballot undervote rate. This assumption is even more conservative than the previous two assumptions.

For the estimated fraction of support for Jennings among early voters and Election Day voters, I used the actual observed vote for Jennings among voters who cast their ballots early and on Election Day, respectively. As discussed above, the observed vote for the candidates is the best estimate of the underlying support for Jennings and Buchanan among voters who used a particular mode of voting within a precinct, absent any other information about the characteristics of individuals who undervoted.

Here is an example to illustrate how this simulation was implemented. In Precinct 1, 64.4% of the early vote went to Jennings; 63.9% of the Election Day vote went to Jennings. There were 361 early votes in Precinct 1. There were 72 undervotes among the early votes. The percentage of undervotes among the absentee ballots was 3.5%. Under the assumption that the correct undervote rate for early voting was 82% the absentee ballot rate, the undervote rate for early voting is set to 2.9% ($0.82 \times 3.5\%$).

Therefore:

- The predicted number of undervotes among the early votes is estimated to be $2.9\% \times 361 = 10$.
- The excess number of undervotes among the early votes is estimated to be $72 - 10 = 62$.
- The number of votes recovered for Jennings among the early vote undervotes is $62 \times 0.644 = 40$.
- The number of votes recovered for Buchanan among the early vote undervotes is $62 - 40 = 22$.

- The net gain in votes for Jennings among the early voters in this precinct is $40 - 22 = 18$.

A similar set of calculations can be performed to estimate the net gain in votes for Jennings among the *Election Day* votes. There were 383 Election Day votes in Precinct 1. There were 34 actual undervotes on Election Day. The percentage of undervotes among the absentee ballots was 3.5%. Under the assumption that the correct undervote rate for the Election Day voting was 92% of the absentee ballot rate, the undervote rate for Election Day voting is set to 3.2% ($0.92 \times 3.5\%$). Therefore:

- The predicted number of undervotes among the Election Day votes is estimated to be $3.2\% \times 383 = 12$.
- The excess number of undervotes among the Election Day votes is estimated to be $34 - 12 = 22$.
- The number of votes recovered for Jennings among the Election Days undervote is $22 \times 63.9\% = 14$.
- The number of votes recovered for Buchanan among the early vote undervotes is $22 - 14 = 8$.
- The net gain in votes for Jennings among the Election Day undervotes is $14 - 8 = 6$.
- Overall, the net gain in votes among the excess undervotes in this precinct, combining the early voting and Election Day vote, is $18 + 6 = 24$.

Table 8 illustrates how the calculation would be done, using Precincts 1 to 5 as examples.

Table 8. Illustration of precinct-by-precinct estimate of recovering excess undervotes. (Calculations were done using a Microsoft Excel worksheet. Some calculations are affected by rounding error, which are identified in the footnotes.)

a. Early vote calculation

Precinct	Actual number of early votes cast	Actual number of early vote undervotes	Undervote rate among absentee ballots in the precinct	82% of absentee undervote rate	Expected number of early vote undervotes ^a	Excess of undervotes among early votes ^b	Percentage of the early vote received by Jennings in the precinct	Excess undervotes allocated to Jennings ^c	Excess undervotes allocated to Buchanan ^d	Net gain in votes to Jennings by allocating excess undervotes ^e
1	361	72	3.5%	2.9%	10	62	64.4%	40	22	18
2	107	19	1.8%	1.5%	2	17	68.2%	12	6	6
3	98	17	4.3%	3.5%	3	14	75.3%	10	3	7
4	260	35	2.5%	2.1%	5	30	60.0%	18	12	6
5	107	18	2.3%	1.9%	2	16	85.4%	14	2	11

b. Election Day vote calculation

Precinct	Actual number of Election Day votes cast	Actual number of Election Day undervotes	Undervote rate among absentee ballots in the precinct	92% of absentee undervote rate	Expected number of Election Day undervotes ^f	Excess of undervotes among Election Day votes ^g	Percentage of the Election Day vote received by Jennings in the precinct	Excess undervotes allocated to Jennings ^h	Excess undervotes allocated to Buchanan ⁱ	Net gain in votes to Jennings by allocating excess undervotes ^j
1	383	34	3.5%	3.2%	12	22	63.9%	14	8	6
2	612	61	1.8%	1.6%	10	51	59.5%	30	21	10
3	417	51	4.3%	3.9%	16	35	61.8%	21	13	8
4	630	58	2.5%	2.3%	15	43	48.3%	21	22	-2
5	380	33	2.3%	2.1%	8	25	67.7%	17	8	9

Table 8, continued.

c. Consolidation of previous calculations			
Precinct	Net gain in votes to Jennings by allocating excess early voting undervotes	Net gain in votes to Jennings by allocating excess Election Day undervotes	Net gain in votes to Jennings by allocating all excess undervotes ^k
1	18	6	24
2	6	10	16
3	7	8	15
4	6	-2	4
5	11	9	20

^aCalculated by multiplying the total number of early votes cast by the undervote rate of the absentee ballots

^bCalculated by subtracting the expected number of early vote undervotes from the actual number of early vote undervotes.

^cCalculated by multiplying the excess of undervotes among early votes by the percentage of the early vote received by Jennings among the early vote in the precinct.

^dCalculated by subtracting the excess undervotes allocated to Jennings from the excess of undervotes among early votes. Rounding error appears in Precinct 3.

^eCalculated by subtracting the excess undervotes allocated to Buchanan from the excess undervotes allocated to Jennings. Rounding error appears in Precinct 5.

^fCalculated by multiplying the total number of Election Day votes cast by the undervote rate of the absentee ballots

^gCalculated by subtracting the expected number of Election Day undervotes from the actual number of Election Day undervotes.

^hCalculated by multiplying the excess of undervotes among Election Day votes by the percentage of the Election Day vote received by Jennings on Election Day in the precinct.

ⁱCalculated by subtracting the excess undervotes allocated to Jennings from the excess of undervotes among Election Day votes. Rounding error appears in Precinct 3.

^jCalculated by subtracting the excess undervotes allocated to Buchanan from the excess undervotes allocated to Jennings.

^kCalculated by adding the two columns immediately to the left.

Table 9 reports the results of using different assumptions to estimate the effects of recovering the excess undervotes. Under any of these scenarios, Jennings emerges the victor in the race, by margins ranging from 478 to 746 votes.

Table 9. Results from the precinct-by-precinct simulations.

Assumed ratio of undervotes	Votes recovered by Jennings	Votes recovered by Buchanan	Net gain by Jennings	Victory margin for Jennings
82%, early voting	8,156	7,041	1,115	746
92%, Election Day voting				
100%	7,975	6,891	1,084	715
200%	6,292	5,445	847	478

Comparisons to Other Situations When Ballot Design Caused “Voter Confusion” and/or a Loss of Votes.

Summary: The level of undervoting experienced using electronic voting machines in Sarasota County for the 13th congressional district greatly exceeds the undervote rates that were estimated to have occurred in other well-established cases of voter confusion. This suggests a substantial possibility that the exaggerated undervote rates in this case were not solely due to voter confusion, but also caused by factors related to machine malfunction.

Based on the analysis in this report, I conclude that it was very likely that the excessively high undervote rates in the 13th congressional district among votes cast in Sarasota County were caused by the use of iVotronic electronic voting machines. It is important to understand the precise mechanism that led these voting machines to perform so poorly in this instance.

In studies of the influence of voting technologies on the outcomes of elections, two classes of explanations are generally explored to explain why voting technology sometimes fail. First, the equipment may physically fail. Second, voters may be confused by features of the equipment that distract them from taking their intended actions.

Examples of actual failures include worn gears on mechanical lever machines, poor maintenance of punch card machines that lead to “pregnant chad,” and malfunctioning diodes

that cause optical scanners to fail. Examples of voter confusion include the “butterfly ballot” used in Palm Beach County during the 2000 presidential election, inadequate instructions that cause voters to invalidate their ballots by writing-in candidates they have already voted for by filling-in an oval on an optically scanned ballot, or the placement of ballot questions in mechanical lever machines outside the visual field of some voters.

In the particular case of the vote in Sarasota County, there are two major potential explanations for why there were so many excess undervotes. One possible explanation is voter confusion. In particular, it has been argued that the ballot layout in Sarasota County naturally drew the eye *away from* the 13th congressional district race, through the use of colors and banners that were intended to draw the eye *toward* the beginning of the state contests.

A second potential explanation is machine malfunction. Numerous voters reported difficulties casting a vote in the 13th congressional district race or with using the “review screen,” which should have allowed them to correct an undervote that happened by accident.¹⁸ These difficulties include pressing the name of one candidate and seeing the other candidate highlighted, or pressing the screen repeatedly with no effect.

Aggregated election returns are usually poor tools to use in gauging the physical failure of election machines. But, aggregate election returns have been used to estimate the effects of *voter confusion* caused by the design of ballots. The studies that have been published on this subject have tended to document “confusion rates” or “lost vote rates” that are very small in size. These studies have typically found the lost vote rate due to poor ballot design to be around 1% to 2%. Sometimes they climb as high as 5%.

If the excess undervote rate I have calculated for Sarasota County was entirely caused by voter confusion, then the “confusion rate” would be in the range of 11.0% to 12.2% of all

¹⁸ For example, see Frank Gluck, Heather Allen, and Mike Sacwitz, “Most callers report voting problems,” heraldtribune.com, last accessed 11/19/06, 5:37pm.

electronic ballots cast in Sarasota County.¹⁹ These percentages are vastly out of proportion to other documented instances of voter confusion, which I will review below.

Because of the tradition of the secret ballot in the United States, it is usually difficult to know precisely why votes have been lost when voters have difficulty with voting machines. Some scholarly research has appeared that attempts to estimate how many votes have been lost outright, or cast for an unintended candidate, because of poor ballot design.

The best-known case of ballot design leading to voter confusion is the so-called “Butterfly Ballot” used in Palm Beach County, Florida during the 2000 presidential election. Research published in the *American Political Science Review* by Wand, et al estimate that roughly 2,300 votes that were intended for Al Gore were mistakenly cast for Pat Buchanan as a consequence of the confusing ballot design in that county. This amounts to a ballot design “mistake rate” of 0.9% among all votes that were intended to be cast for Al Gore.²⁰

Another case in which the details of ballot design were shown to influence the ability of voters to complete their voting intentions was the October 7, 2003 gubernatorial recall election in California. This election featured only two items on the ballot: (1) a question about whether Governor Gray Davis should be recalled and (2) a candidate list allowing the voter to choose a gubernatorial candidate, in the event that Davis was recalled. The list included 135 candidates who were running to replace Davis. Among these were a handful of well-known candidates who had vigorously campaigned across the state (such as Arnold Schwarzenegger, who eventually won) interspersed among a sea of mostly unknown candidates who were on the ballot solely because of California’s liberal ballot access laws.

¹⁹ These rates are calculated as follows. The number of ballots cast electronically in Sarasota County totaled 119,759 (30,832 early votes plus 88,927 Election Day votes). The lower bound on the estimate of the number of excess undervotes was 13,209; $13,209/119,759 = 11.0\%$. The upper bound estimate of the number of excess undervotes was 14,739; $14,739/119,759 = 12.3\%$.

²⁰ Jonathan N. Wand, et al, “The butterfly did it: The aberrant vote for Buchanan in Palm Beach County, Florida,” *American Political Science Review*, vol. 95, 2001, pp. 793-810.

Relying on the randomization rules that govern the candidate ballot order in California elections, Alvarez, et al published research in *PS: Political Science and Politics* that showed that unknown candidates who were lucky enough to be placed next to the high-profile candidates received a small boost in their vote total.²¹ It is reasonable to assume that the excess of votes received by these lucky obscure candidates were intended for the better-known neighboring candidates. While the pattern was very regular, the magnitude of the effects was very small. For instance, Alvarez, et al estimate that approximately 0.35% of the votes that were intended for Schwarzenegger were cast for his “ballot neighbors” instead. In other words, voter confusion in this case amounted to much less than 1% of the votes intended for Schwarzenegger being given to other candidates.

The most commonly-studied effect that ballot design has on voter behavior concerns ballot order effects in general. In other words, the studies concern the excess votes that candidates receive purely from being listed first on the ballot. The most frequently cited scholarly article on the subject is by Miller and Krosnick, published in *Public Opinion Quarterly*.²² Studying elections in Ohio, in which there were different methods used to randomly list candidate names on the ballot, Miller and Krosnick discovered a regular pattern of advantage given to candidates who were listed first. They found that, on average, being placed at the top of the ballot garnered the candidate 2.5% more of the vote. This advantage varied according to the race being considered. It was as high as 5% for some judicial races. As a general matter, ballot order influenced the behavior of voters most on nonpartisan races and on races for obscure offices.

²¹ R. Michael Alvarez, et al, “The complexity of the California recall election,” *PS: Political Science and Politics*, Jan. 2004, pp. 23-26.

²² Joanne M. Miller and Jon A. Krosnick, “The impact of candidate name order on election outcomes,” *Public Opinion Quarterly*, vol. 62, no. 3, pp. 291-330.

Voters can be misled by ballots that are challenging --- or by subtle design features that draw their attention away from the task at hand --- but the excess in undervotes cast in Sarasota County in the 13th congressional district race is vastly greater than what has been documented in carefully studied instances where ballot design has been shown to influence voter behavior. It is reasonable to assume, therefore, that this excess in undervotes in Sarasota County was not purely the consequence of a poorly designed ballot.

Dated: November 20, 2006

Charles Stewart III

CURRICULUM VITAE

CHARLES HAINES STEWART III

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DATE: September 8, 2006

EDUCATION

INSTITUTION	Degree	Date
Stanford University	Ph.D.	1985
Stanford University	A.M.	1982
Emory University	B.A.	1979

TITLE OF DOCTORAL THESIS: The Politics of Structural Reform: Reforming the Budgetary Process in the House, 1865-1921 (Dissertation committee: John E. Chubb [chair], Terry M. Moe, and John A. Ferejohn)

PROFESSIONAL EXPERIENCE

MIT

1985–1989	Assistant Professor of Political Science
1989–1999	Associate Professor of Political Science
1990–1993	Cecil and Ida Green Career Development Associate Professor of Political Science (3-yr. term)
1999–present	Professor of Political Science

MIT: Administrative

2002–2005	Associate Dean of Humanities, Arts, and Social Sciences
2005–present	Head of the Department of Political Science

Non-MIT

1989–1990	National Fellow, Hoover Institution, Stanford University
1998 (summer)	Visiting Associate Professor of Political Science, Stanford University

SEMINARS, COLLOQUIA, ETC.

Note: The following list excludes numerous presentations at professional conferences.

May 2006	"Elections since 2000: <i>Still</i> in Search of Accurate Vote Totals?" Talk given to the Milwaukee Public Policy Forum, Milwaukee, Wisconsin.
December 2005	"U.S. Senate Elections before 1914," seminar in the Department of Political Science, University of Wisconsin.
October 2004	"Increasing Voter Participation and Confidence," talk given at the symposium on The Integrity of the Electoral Process," University of Toledo College of Law.
April 2004	"The Long Strange Trip of Election Reform: Why 2004 Won't Be Much Different from 2000," talk given at the symposium on Voting in an E-Democracy, Yale University
April 2000	"The Inefficient Secret: Organizing for Business in the U.S. House of Representatives, 1789–1861," seminar in the Department of Political Science, New York University.
January 2000	"The Inefficient Secret: Organizing for Business in the U.S. House of Representatives, 1789–1861," seminar in the Department of Political Science, Yale University.
November 1999	"The Inefficient Secret: Organizing for Business in the U.S. House of Representatives, 1789–1861," seminar in the Department of Politics, Princeton University.
November 1998	"Architect or Tactician? Henry Clay and the Institutional Development of the U.S. House of Representatives," seminar in the Department of Political Science, Columbia University.
April 1994	"Ain't Misbehavin': Reflections on Two Centuries of Congressional Corruption," seminar in the Department of Government, Harvard University.
October 1992	"Stacking the Senate, Changing the Nation: Republican Rotten Boroughs and American Political Development," seminar in the Political Science Department, Yale University.
April 1992	"Stacking the Senate, Changing the Nation: Republican Rotten Boroughs and American Political Development," seminar in the Politics Department, Princeton University.

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- February 1992 "Stacking the Senate, Changing the Nation: Republican Rotten Boroughs and American Political Development," seminar in the political economy program, Government Department, Harvard University.
- November 1991 "Stacking the Senate, Changing the Nation," seminar in the Department of Political Science, Duke University.
- November 1991 "Committee Hierarchies in the Modernizing House of Representatives," seminar in the program on political economy, University of North Carolina, Chapel Hill.
- March 1991 "Through a Glass Darkly: The U.S. in the Middle East," lecture in the MIT Community Series on the Middle East.
- October 1990 "A Theory of Supreme Court Nominations," presentation to the Harvard/MIT Discussion Group on Political Economy (with Peter Lemieux).
- April 1990 "Political Institutions and Fiscal Policy," seminar in the Domestic Studies Program, Hoover Institution, Stanford University.
- February 1990 "Parties and Deficits: Some Historical Evidence," seminar in the Department of Political Science, University of California at San Diego.
- October 1989 "Advice? Yes! Consent? Maybe. Supreme Court Nominations from Washington to Reagan," seminar in the Workshop on Politics and Organizations, Graduate School of Business, Stanford University.
- March 1987 "How Does Reform Change Congress? The Consequences of Budget Reform in the House of Representatives, 1865-1921," presentation in the Seminar on History and Political Economy, The University of Pennsylvania.

FIELDS OF INTEREST

American politics
 Legislative politics
 Campaigns and elections
 American political development
 Research methods

GRANTS AND AWARDS

1989–90, 2000–01	Everett McKinley Dirksen Congressional Leadership Research Center
1989	The Everett Moore Baker Memorial Award for Excellence in Undergraduate Teaching, M.I.T.
1991	Marion and Jasper Whiting Foundation
1991–93	National Science Foundation, "The Development of the Committee System in the House, 1870-1946," SES-91-12345
1993–2003	Margaret MacVicar Faculty Fellow, M.I.T. (10-year term)
1994	Mary Parker Follett Award, for Best Published Essay or Article, 1993-1994, Politics and History Section, American Political Science Association (with Barry Weingast).
1999	Franklin L. Burdette Pi Sigma Alpha Award, for Best Paper Presented at the 1998 Annual Meeting of the American Political Science Association. ("Architect or Tactician? Henry Clay and the Institutional Development of the U.S. House of Representatives")
2000–2003	Class of 1960 Fellow, M.I.T. (3-year term)
2002	Jewell-Loehenberg Award, for best article to have appeared in the <i>Legislative Studies Quarterly</i> , Legislative Studies Section, American Political Science Association (with Steven Ansolabehere and James M. Snyder, Jr.)
2002	Jack Walker Award, honoring an article or published paper of unusual significance and importance to the field, Political Organizations and Parties Section, American Political Science Association (with Steven Ansolabehere and James M. Snyder, Jr.)

- 2002 Boston Foundation, "Voting in Massachusetts" grant.
 2002 Best Reference Source 2002 by *Library Journal* for *Committees in the United States Congress, 1789–1946*.
- 2005–07 National Science Foundation, "Collaborative Research: U.S. Senate Elections Data Base, 1871–1913" (with Wendy Schiller).

PROFESSIONAL ORGANIZATIONS

American Political Science Association (Sections: Legislative studies, political methodology)
 (Member, E.E. Schattschneider Award Committee, 1988–89)
 Legislative Studies Section of the American Political Science Association (Member, Richard Fenno Award Committee, 1993–94; Chair, CQ Award Committee, 2002–2003; Chair, Jewell-Lochenberg Award, 2004–05; Council member, 2005–present)
 Politics and History Section of the American Political Science Association (Council member, 1995–97; Chair, Mary Parker Follett Award Committee, 2001)
Legislative Studies Quarterly, Editorial Board, 2003–present
Studies in American Political Development, Editorial Board, 2003–present
Congress and the Presidency, Editorial Board, 1994–present
American Politics Quarterly, Editorial Board, 1992–1997
 Planning committee, Senate Election Study (1990 election)
 Midwestern Political Science Association
 Southern Political Science Association
 American Association for the Advancement of Science

MIT ACTIVITIES AND COMMITTEES

Housemaster, McCormick Hall (1992–present)
 Chair, Housemasters Council (1999–2001)
 Bexley Hall Housemaster Search Committee (chair, 1999–2000)
 Director, MIT Washington Summer Internship Program (1994–present)
 Institute Committees
 Task Force on the Educational Commons (associate chair, 2003–present)
 Task Force on Student Life and Learning (1996–1998)
 Committee on Faculty Quality of Life (co-chair, 2003–present)
 Faculty Policy Committee (2001–2003)
 Committee on Undergraduate Program (1993–1998; chair, 1995–1997)
 Special CUP Subcommittee on Pass/No Record Credit and Advanced Placement (chair, 1999–2003)
 Ad hoc Advisory Group on Orientation 1998 (1997)
 Ad hoc Advisory Committee on the Principles and Goals of MIT's Residential System (1998)
 Committee on Curricula (*ex officio*, 1995–1997)

HASS-D Review Committee (1993–94)

Department committees

- Graduate admissions (1985–1989, 1990–1993, 2002–2004)
- Financial aid (1986–1989, 1990–1993, 1994–1995; chair, 1990–1993)
- Undergraduate program (1987–1989, 1993–present; chair, 1993–present)
- Computer representative (1994–1995)
- Independent Activities period coordinator (1985–1987)
- Political science search committees
 - Formal theory and research methodology (1986–1989, 1990–1992)
 - American politics (1988–1989, 1990–1993, 1997–1998; chair, 1992–1993, 1997–1998, 2004–05)
- HASS distribution oversight committee on cultures and societies (1987–1989)
- HASS Overview Committee (1999–2000, 2002–05; chair, 2002–05)
- Faculty fellow, Burton House (1988–1989)
- Truman Scholarship Selection Committee (1988–1989, 1994–1996, 2002)
- Burchard Scholar Selection Committee (1992–1996, 2000, 2002–04)
 - Kelly-Douglas Prize Selection Committee (2002–04)

PUBLICATIONS

Books

- Forthcoming *Fighting for the Speakership: The House and the Rise of Party Government.* Princeton University Press (with Jeffery A. Jenkins).
- 2002 *Committees in the United States Congress, 1789–1946*, 4 vols. Congressional Quarterly Press (with David Canon and Garrison Nelson).
- 2001 *Analyzing Congress* W. W. Norton.
- 1989 *Budget Reform Politics: The Design of the Appropriations Process in the House, 1865–1921.* Cambridge University Press.

Chapters in Edited Collections

- 2006 “Architect or Tactician? Henry Clay and the Institutional Development of the U.S. House of Representatives” in *Process, Party, and Policy Making: New Advances in the Study of the History of Congress*, eds David W. Brady and Mathew D. McCubbins, Stanford University Press (forthcoming).
- 2006 “Improving the Measurement of Election System Performance in the United States” in *Institutionalizing Barriers to Mobilizing Democracy*, eds. Margaret Levi, James D. Johnson, Jack Knight, and Susan Stokes (forthcoming)
- 2005 “Congress in the Constitutional System,” in *Institutions of Democracy: The Legislative Branch*, ed. Sarah Binder and Paul Quirk, Oxford University Press (forthcoming).
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- 2004 "U.S. Senate Elections before 1914" (with Wendy Schiller), paper presented at the annual meeting of the American Political Science Association.
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- 1998 "The Development of the Senate Committee System, 1789-1879" (with David Canon), paper presented at the annual meeting of the American Political Science Association.
- 1998 "Committee Assignments as Side Payments: The Interplay of Leadership and Committee Development in the Era of Good Feelings," (with Jeffery A. Jenkins), paper presented at the annual meeting of the Midwest Political Science Association.
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- 1990 "Parties and the Deficit: Some Historical Evidence," (with James Alt) presented at the Workshop on Political Economics, National Bureau of Economic Research, Cambridge, Massachusetts, February.

LIST OF THESES SUPERVISED

Ph.D. Thesis: Primary Supervision: Completed

Bruce Bimber
 Seong Ho Lim
 Amy E. Black
 Stephen Minicucci
 Beth Rosenson

Ph.D. Theses: Secondary Supervision: Completed

Lee Perlman
 Rob Stowe
 Jean Peretz
 John Coleman
 David Guston
 Jeff Lewis
 Sharon Weiner
 Judy Layzer
 Jocelyn Crowley
 David Burbach
 Marsha Simon
 Rachel Cobb
 David Konisky
 Douglas Kriner (Harvard)

Ph.D. Theses: Primary Supervision: In Progress

Suzanne Neill

Ph.D. Theses: Secondary Supervision: In Progress

William LeBlanc

S.M. Theses: Primary Supervision: Completed

Nancy Otis
 Gregory Mayew
 Nancy Cohen
 Jay Youngclaus
 Brooks Mendall

S.M. Theses: Secondary Supervision: Completed

Reid Lifset
 Robert Snyder
 Sarah Lawrence
 Anders Hove

S.B. Theses: Primary Supervision: Completed

Thomas Murphy
 Christopher Crowley (Course 6, Computer Science)
 Andrew Fish
 Daniel Pugh
 T. Michael Smith (Course 6, Computer Science)
 Clifford Rothenberg
 John Abbamondi
 Karen Kaplan (joint with Course 14, Economics)
 Andrei Saunders
 Janice Yoo
 Brooks Mendell
 David Kessler (joint with Course 14, Economics)
 J. Paul Kirby
 Colin Page
 Robert Fowler
 Norman Brodesser
 William LeBlanc
 Sarah Anderson
 Orion Smith
 Andrew Montgomery (Course 6, Electrical Engineering and Computer Science)
 Melanie Wong
 Courtney Shiley
 Kristie Tappan

S.B. Theses: Secondary Supervision: Completed

Michael Sununu
 David Alcocer
 Christine Coffey
 Rebecca Berry
 Alice Yao
 Karl Erdmann
 Miranda Priebe
 Kaitlin E.M. Lewis

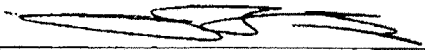
S.B. Theses: Primary Supervision: In progress

David Tobias

S.B. Theses: Secondary Supervision: In progress

Voters can be misled by ballots that are challenging --- or by subtle design features that draw their attention away from the task at hand --- but the excess in undervotes cast in Sarasota County in the 13th congressional district race is vastly greater than what has been documented in carefully studied instances where ballot design has been shown to influence voter behavior. It is reasonable to assume, therefore, that this excess in undervotes in Sarasota County was not purely the consequence of a poorly designed ballot.

Dated: November 20, 2006


Charles Stewart III

DECLARATION OF DAN S. WALLACH

1. I, Dan S. Wallach, declare under penalty of perjury that the foregoing is true and correct.
2. I am an associate professor in the Department of Computer Science at Rice University. I am also the associate director of ACCURATE (A Center for Correct, Usable, Reliable, Auditable, and Transparent Elections), which is a research center funded by a \$7.5 million grant from the National Science Foundation and which studies technological and policy issues with electronic voting systems.
3. I am an expert in computer security, particularly with respect to the Internet. I became interested in voting security issues in 2001. Since then, I have published three research papers on electronic voting security issues. One of those papers described serious security vulnerabilities in the Diebold AccuVote-TS (paperless touch-screen) voting system, including how ordinary voters could cast multiple votes.¹ I have testified about voting issues to government agencies across the U.S., as well as internationally; I have assisted National Institute of Standards and Technology (NIST) and the U.S. Election Assistance Commission (EAC) in the drafting of the 2005 federal Voluntary Voting System Guidelines; and I have assisted the Carter-Baker Commission on Federal Election Reform and the Brennan Center's Voting System Security Task Force. I have also served as a technical expert in a

¹ Tadayoshi Kohno, Adam Stubblefield, Aviel D. Rubin, Dan S. Wallach, Analysis of an Electronic Voting System, 2004 *IEEE Symposium on Security and Privacy* (Oakland, California), May 2004. <http://avirubin.com/vote/analysis/>

variety of lawsuits where electronic voting systems were a concern. My full curriculum vita is attached as Appendix A.

4. I have been asked to provide my opinion concerning information and equipment that might be necessary to conduct a forensic investigation on the recent election in Sarasota County, whose purpose would be to determine the cause or causes of the unusually high undervote rate in the race for the 13th Congressional District. This declaration will continue with three main sections: hypotheses which might explain the undervote rate in Sarasota County's recent election, common terminology used when discussing elections, and hardware, software, and information that would be necessary to conduct a thorough forensic investigation of the undervote rate recent election in Sarasota County.

SARASOTA UNDERVOTE HYPOTHESES

5. In the recent election for Florida's 13th Congressional District, an issue of note is the "undervote" rates, particularly within Sarasota County. The election results from Sarasota County, as published on November 7, are:

	Total Votes	%	Election Day	Early Voting	Absentee
Vern Buchanan	58,534	47.24	36,619	10,890	11,025
Christine Jennings	65,367	52.76	39,930	14,509	10,928
Over Votes	1		0	0	1
Under Votes	18,382		12,378	5,433	571

6. These totals indicate that 12.9% of the votes cast in Sarasota County for the 13th Congressional District were "undervoted", i.e., the electronic records indicate that no selection was made by the voter. This contrasts with other

aces that have much lower undervote rates (e.g., 1.14% in the Senate race, 1.28% in the Governor race, 4.36% in the Attorney General race, and 4.43% for the Chief Financial Officer race).

7. If the Direct Recording Electronic (DRE) votes in Sarasota County are considered alone, the Congressional undervote rate was 14.9%. This contrasts with a Sarasota County Congressional undervote rate of 2.5% on absentee ballots. Without any doubt, the DRE votes in the Congressional race exhibit an unusually high undervote rate.
8. There are a number of different hypotheses that can explain the peculiar undervote rate for the Congressional race. I explain each possible hypothesis and what techniques may be able to validate or exclude these hypotheses from further consideration.
9. The **voter abstention hypothesis** simply posits that Sarasota County's voters deliberately chose to abstain from voting in the Congressional race. Unfortunately, telephone-based voter polls would not be a reliable way of validating this hypothesis as survey participants might lie to best support their candidate of preference. Instead, the best way to test this hypothesis is by considering the statistics for voters in Sarasota County, who voted on an ES&S iVotronic, with the voters in surrounding counties, in the same Congressional district, who voted using other technologies. This sort of statistical testing is generally done by carefully comparing specific precincts that are known to have similar demographics.
10. The **human error hypothesis** posits that the ballot style, the angle of view to the screen, the presence of two or more races on the same "page," or other

factors in how the Congressional race was presented to voters caused some voters to “miss” the race. While the summary screen, presented immediately prior to when the voter casts a ballot, gives an opportunity for voters to recognize and correct such mistakes, some voters may not read this carefully and could likewise miss the opportunity to correct their undervote. There are several possible ways to validate this hypothesis. First, other races in Florida, using the same ES&S iVotronic equipment, may have had a similar visual presentation to the page seen by voters in Sarasota County. Statistical comparisons of those counties’ results to Sarasota County may be able to identify whether similar populations facing a similar ballot presentation had similar undervote rates. Second, ES&S iVotronic systems or a reasonable facsimile thereof could be installed in a laboratory setting and human subjects could be asked to cast ballots for fictional candidates. If the human errors occur under laboratory conditions, then they would be likely to have occurred in the recent election as well.

1. The **software bug hypothesis** suggests that the ES&S iVotronic machines may have latent mistakes or errors in their design that escaped the normal testing and certification processes that are applied to all voting systems. There may be something about the ballot styles used in Sarasota County that induced the ES&S iVotronic machines to occasionally transform genuine votes to undervotes. To validate this hypothesis, we might borrow voting machines, cast a large number of ballots (while videotaping everything we do), and compare the machine-reported totals to our original input. If they differed in the Congressional race, this would be a proof that the machines’

software was at fault. (This process will be far more comprehensive than the “logic and accuracy” testing that election officials perform prior to every election.) Unfortunately, such testing can never prove the *absence* of relevant software bugs. The best way to do that would be to inspect the *source code* of the voting system. Source code is the medium in which software engineers conceive and implement a computer program.

12. The **post-election corruption hypothesis** suggests that the voting machines internally recorded votes correctly, but that the vote records were somehow corrupted, perhaps by poll workers or election administrators, before they were tallied and presented as official results. To test this hypothesis, we must require that the original voting machines were properly sequestered and protected (i.e., their chain of custody was properly maintained at all times). Then, we could directly download voting records from each machine and tabulate them ourselves. If we found any discrepancies, that could be indicative of corruption. The recount process, which is now complete, similarly provides a check against this form of corruption.
13. The **malicious software hypothesis** considers that the software or firmware inside the voting machines might have been illegitimately modified in such a way as to introduce bias into the records of votes cast on that particular machine. Testing this hypothesis would require physically disassembling the voting machine to access its internal memory chips and extract their contents for suitable forensic analysis.

TERMINOLOGY AND INFORMATION ON VOTING SYSTEMS

14. Direct Recording Electronic (DRE) voting machines are designed to record and tabulate votes electronically within their computer memory. All DRE systems record the user's ballot in volatile internal memory, one choice at a time, and only commit the voter's ballot to a non-volatile electronic form when the voter presses the "cast ballot" button, or equivalent. At this point, standards in place since 1990 require that at least two durable copies be created. Typically, these are non-volatile electronic copies that remain inside the machine until the polls close.
15. In contrast, Optical Scan systems take paper ballots as input, scan the ballots for certain written marks, and tabulate the ballot marks, creating an electronic record of the vote. Thus, the Optical Scan equivalent of pressing the "cast ballot" or "vote" button is to deposit a paper ballot in the scanner or ballot box; scanning also creates two copies of the vote, one retained on paper and the other in electronic form within the scanner.
16. Both DRE and Optical Scan systems are able to deliver both printed and electronic results at the close of the polls. The electronic results may be delivered by any of several means to canvassing centers where the results from multiple precincts are combined to create county-wide or district-wide results. The available means typically include transmission by modem and recording of results onto removable memory cartridges that may be hand-delivered to the canvassing center. Cartridge formats include PCMCIA cards (a format set by the Personal Computer Memory Card International Association), CompactFlash cards, and various proprietary devices.

17. The volatile memory used for temporary storage within electronic voting machines is typically solid state Random Access Memory (RAM). If the machine is restarted or the power is removed, the data in the volatile memory is erased. It is also typically erased between voters to reduce the risk of disclosure of one voter's choices to the next voter.
18. The non-volatile memory used to store durable copies of the votes may be battery-backed RAM, an internal hard disk drive, flash memory, or a recordable compact disc. The technology used varies by vendor. Flash memory, whether permanently installed in a voting machine or packaged as a removable PCMCIA or CompactFlash card, is a form of Electrically-Erasable Programmable Read-Only Memory (EEPROM).
19. All Direct Recording Electronic voting systems store a file of "ballot images" in non-volatile memory, containing one electronic copy of each voter's ballot. The term "image" in this context, does not necessarily imply anything visual, but rather the fact that this is not an original ballot, but rather, a copy made at the time that the voter presses the "cast ballot" or "vote" button. Some optical scan voting systems also record ballot images.
20. All electronic voting systems retain "event logs," sometimes called "audit logs," in non-volatile memory. These record the times at which each significant event occurs in the course of an election such as power on, power off, poll opening, poll closing and the casting of each ballot. These records allow determination that the polls were opened and closed legally and they allow a somewhat independent check to be made on the number of ballots cast on the system.

21. At the end of the voting period, precinct election officials formally close the polls by closing each electronic voting system in use. This is intended to prevent the recording of additional votes.
22. As the polls are closed, all electronic voting systems deliver a summary of the votes counted on that system, giving the total number of votes for each candidate. This summary may be computed as running totals throughout the day, or it may be computed from ballot images at the time the polls are closed.
23. In some cases, the closing of the system copies some or all of the data from the internal non-volatile memories to a removable non-volatile memory device. In other cases, the closing of the DRE permits removal of one of the non-volatile memory devices on which data has already been recorded. The removable memory devices may store the summary vote totals for the machine, the complete file of ballot images, or both.
24. Electronic voting machines also generally include a printer that can print the summary voting data and in some cases also the ballot images. In many jurisdictions, one or both of these are printed at the polling place and signed by the polling place election officials as part of the normal procedures for closing the polls. Likewise, "zero tapes" are often printed and signed by election officials at the beginning of the voting day as evidence that there were no votes in the machine prior to the start of the election.
25. Precinct election officials transmit, either physically or electronically, the summary data, event logs, or ballot image files from the electronic voting machines to a central tabulator at the canvassing center where the votes are aggregated. From there, a final total may be derived. Electronic transmission

is usually by telephone line and modem, but in some cases, Internet protocols are used, allowing use of commercial Internet Service Providers to deliver this data, and in other cases, wireless transmission is used.

26. Election officials may remove the removable non-volatile memory devices from the electronic voting systems at the polling place for immediate return to the canvassing center, or these may be left sealed in the machines until the machines are returned to the canvassing center. In either case, the contents of these removable memory devices may be copied into the central tabulator in order to aggregate the votes.
27. Aggregate totals may also be manually computed from the printouts of summary data that were delivered from the precinct.
28. All paths for delivery of data from the precinct to the canvassing center are vulnerable to error or malicious alteration. Data hand delivered from the precinct to the canvassing center is subject to alteration or loss. Data may be accidentally read into the tabulating system more than once, so that votes are counted twice. Data transmitted over public networks such as the telephone system, radio broadcast or the Internet may be subject to interception and alteration. Physical paper ballots or voter-verifiable paper trail (VVPT) records may be lost, altered (whether accidentally or intentionally) or forged.
29. In most jurisdictions, one of the copies is considered the official result, binding unless questions arise. This is usually either the contents of the hand-delivered electronic cartridge or the signed and witnessed printed copy of the summary data from the precinct.

30. In most jurisdictions, in a recount or election contest, one of the other copies takes precedence. The original paper ballots, VVPT records, or the signed paper copy (if neither of the former exist) are usually designated as the official copy in case of conflict.
31. In most jurisdictions, the other surviving records of the election are never examined. The other surviving records that are typically available include copies of the ballot image file and event logs surviving in removable non-volatile memory cartridges and in the non-volatile memory that is a permanent part of the electronic voting system.

HARDWARE, SOFTWARE, AND INFORMATION NEEDED TO TEST THESE HYPOTHESES

32. Sarasota County used ES&S iVotronic voting systems for its early and election day voting. The election results are accumulated in computers running ES&S's "Unity" software suite. Unity can produce a variety of different reports that describe what occurred in the election. At present, the County has only published two of these reports. One describes "bottom line" tallies of the entire county. The other has individual tallies from each precinct. **Conducting an effective audit would require two additional reports: "event logs" and "ballot image logs."** Appendix B shows samples of these logs, taken from a race in Webb County, Texas. (Webb County uses the same ES&S equipment as is used in Sarasota County.) The County can produce these reports in only a few minutes, using their Unity systems. Unity scrambles the order of the ballot images, so the production of these reports will, in no way, compromise voters' anonymity. **Conducting an effective**

audit would require the reports in digital form. The reports will fit comfortably on a recordable compact disc. The reports refer to individual voting machines by their serial numbers. **Conducting an effective audit would require a list of which machines, by serial number, were used in which precincts.**

33. Given the above information, we will be able to begin our study of the election. We can determine if the undervote rate is consistent across machines in a precinct, or if particular machines are more prone to exhibiting a high undervote rate. We can determine if the undervote rate is correlated in any way with how many votes were captured on a given machine. We may be able to detect other anomalous factors as well. For example, when we studied the March 2006 primary in Webb County, Texas, we found 27 “test votes” had been included in the final tally. We also found several machines which had been cleared on election day, possibly causing votes to be lost.²

34. When ES&S iVotronic machines are to be loaded with the ballot styles for any particular election, the Unity suite contains a tool that allows these ballot styles to be described. A variety of computer files are written which are then copied to an iVotronic, either using CompactFlash cards or PEBs.

Conducting an effective audit would require digital copies of the ballot style files for all nine ballot styles used in Sarasota County; we need every file that is loaded onto the iVotronic as part of the “ballot programming” process, both in early voting and on election day (if different). This data

² Dan S. Wallach, “Security and Reliability of Webb County’s ES&S Voting System and the March ‘06 Primary Election” (Expert Report in *Flores v. Lopez*), May 2006. <http://accurate-voting.org/wp-content/uploads/2006/09/wcbb-report2.pdf>

will be necessary when examining iVotronic machines and/or their source code (both described in more detail, below).

35. To conduct a forensic examination of the recent election, we will need actual ES&S iVotronic machines, configured identically to those used in Sarasota County. At a minimum, **conducting an effective audit would require eight iVotronic machines from Sarasota County which experienced high undervote rates during the recent election along with their carrying cases, power adapters, and other apparatus to set up voting booths.**³ We would use two of the machines as part of the software analysis (described below) and the other six for conducting carefully controlled, videotaped tests, such that we might be able to demonstrate a software bug, should it be present. In order to properly perform such a demonstration, we will need other equipment as is used inside every voting precinct in Sarasota County. **Conducting an effective audit would likewise require two supervisor PEBs (personalized electronic ballot), nine regular PEBs (one configured for each ballot style used in Sarasota County in the recent election), a standard ES&S “Communications Pack” (containing a thermal printer and all the necessary cabling), and all of the manuals and training materials used in Sarasota County.** In addition, we need some equipment not commonly found in a precinct. **Conducting an effective audit would require a PEB reader, used to connect PEBs to standard PCs. We would also require permission to physically open and inspect the internal components of one**

³ Once we have the requested logs, we will be able to identify the specific machines with the highest undervote rates by their serial numbers. Until then, we ask for one machine from each of the following precincts with high undervote rates: 31, 44, 74, 105, 117, 118 as well as two machines used during early voting.

of our iVotronic machines, including the necessary tools and documentation to extract and read the “three redundant memories” contained within the iVotronic. Also, in order to operate these iVotronic machines, **conducting an effective audit would require that we know their passwords.**

36. As described above, one of the hypotheses to test is whether a software bug may have somehow resulted in the observed undervote rate in Sarasota County. The best way to identify whether software bugs may have been responsible is to study the software in its human-readable form: “source code.” Software engineers write source code in programming languages such as C, C++, or Java, and then use other software tools, such as compilers, to translate this source code to a binary format that the computer can directly execute. For voting systems, each vendor’s source code is typically placed in escrow with the state to allow for its inspection, in events such as what has occurred here, as well as to provide the state some recourse if the vendor goes out of business. **Conducting an effective audit would require access to a full copy of all ES&S source code, as escrowed with the State of Florida.**
37. With access to the source code, we would be able to determine if there are flaws as serious as what we and others have discovered in the Diebold AccuVote-TS voting system. We would also be able to determine whether some unforeseen and previously untested interaction between the ballot definition files and the voters might have caused voter intent to be incorrectly captured by the machine.

38. For example, there may be a latent “buffer overflow” bug⁴ that is triggered by the specific ballot definitions used in Sarasota County in their recent election. Buffer overflow bugs often induce non-deterministic behavior in software and could be responsible for some votes being corrupted while others are recorded properly. Furthermore, because each county uses different ballot definitions, problems observed in one county would not necessarily be repeated in other counties.
39. Likewise, software errors often manifest themselves when used with unusual inputs that may not have been adequately tested. For example, consider Florida’s races for U.S. Senate and for Governor, each of which had seven options, whereas most other races only have two choices. It’s entirely possible that ES&S’s development and testing process never considered such a possibility and the result could be non-deterministic software behavior as described above.
40. Once such a non-deterministic bug has been triggered, its effects could vary widely. It is entirely possible that the software would continue to function in an apparently correct manner, or it is possible that the bug could cause corruption in an arbitrary part of system. If, for example, corruption were to have occurred in the procedures responsible for committing vote records to the non-volatile storage medium, then it would be possible for subsequent vote records to be corrupted as they are written out.

⁴ A full description of buffer overflow bugs is beyond the scope of this declaration. The Wikipedia has a reasonable technical introduction to the topic (http://en.wikipedia.org/wiki/Buffer_overflow).

41. As this source code is not normally made available for public analysis, states typically rely on a certification process managed by the National Association of State Election Directors (NASED) which will soon be managed instead by the federal government's Election Assistance Commission (EAC). Election system vendors submit their source code along with a "technical documents package" to one of several Independent Testing Authorities (ITAs). The ITA reports and the technical document packages are considered to be trade secrets between the vendor and the ITA, although some states require that they receive copies for their own inspection. I had the opportunity to inspect the ES&S-relevant documents as an expert in *Conroy v. Dennis* (District Court, Denver County, Colorado, Case Number 06CV6072). I found evidence of significant weaknesses in ES&S's software engineering procedures and in their software design.⁵ These weaknesses apply directly to the ES&S iVotronic systems certified and used in Florida. As such, **we cannot rely on prior certification and testing as a substitute for our own analysis.**

42. I have worked in past legal challenges with software considered to be proprietary and trade secret including, in *Uniloc v. Microsoft* (a patent infringement case), code that Microsoft considers so sensitive that most of its own developers are never allowed to see it. I would be willing to sign an appropriate protective order that stipulates that I will protect the secrecy of the code and that I will not disclose anything not relevant to the undervote issue in Sarasota County's recent election. And furthermore, if I need additional

⁵ Dan S. Wallach, "Expert Report in *Conroy v. Dennis*" (portions redacted), September 2006. <http://accurate-voting.org/wp-content/uploads/2006/09/dwallach-redacted-new.pdf>

people to work with me on this analysis, I would require that they accept the same restrictions.


Dan S. Wallach

Appendix A to Declaration of Dan S. Wallach

Dan Seth Wallach

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Department of Computer Science
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 Duncan Hall 3121
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Education Princeton University (Princeton, NJ), Department of Computer Science,

Ph.D. Computer Science, January 1999.

M.A. Computer Science, May 1995.

U.C. Berkeley (Berkeley, CA), College of Engineering,

B.S. Electrical Engineering/Computer Science, May 1993.

Publications (see also, [publications by area](#))**Journal Papers**

Cristian Coarfa, Peter Druschel, Dan S. Wallach, [Performance Analysis of TLS Web Servers](#), *ACM Transactions on Computer Systems*, to appear.

Eyal de Lara, Yogesh Chopra, Nilesch Vaghela, Rajnish Kumar, Dan S. Wallach, Willy Zwanepeol, [Iterative Adaptation for Mobile Clients Using Existing APIs](#), *IEEE Transactions on Parallel and Distributed Systems*, vol. 16, no. 10, October 2005 (also appeared in *IEEE Distributed Systems Online*, vol. 6, no. 9, September 2005).

Adam B. Stubblefield, Aviel D. Rubin, and Dan S. Wallach, [Managing the Performance Impact of Web Security](#), *Electronic Commerce Research Journal*, February, 2005.

Andrew M. Ladd, Kostas E. Bekris, Algis Rudys, Lydia E. Kavradi, and Dan S. Wallach, [Robotics-Based Location Sensing Using Wireless Ethernet](#), *Wireless Networks*, volume 11, number 1-2, January 2005, pp. 189-204.

Andrew M. Ladd, Kostas E. Bekris, Algis P. Rudys, Dan S. Wallach, and Lydia E. Kavradi. [On the Feasibility of Using Wireless Ethernet for Indoor Localization](#), *IEEE Transactions on Robotics and Automation*, volume 20, number 3, June 2004.

Y. Charlie Hu, Weimin Yu, Alan Cox, Dan S. Wallach, and Willy Zwanepeol, [Runtime Support for Distributed Sharing in Safe Languages](#). *ACM Transactions on Computer Systems*, volume 21, number 1, pp. 1-35, February 2003.

Algis Rudys and Dan S. Wallach, [Termination in Language-based Systems](#), *ACM Transactions on Information and System Security*, volume 5, number 2, May 2002.

Dan S. Wallach, Edward W. Felten, and Andrew W. Appel, [The Security Architecture Formerly Known as Stack Inspection: A Security Mechanism for Language-based Systems](#), *ACM Transactions on Software Engineering and Methodology*, volume 9, number 4, October 2000.

Refereed Conference Papers

Atul Singh, Tsuen-Wan "Johnny" Ngan, Peter Druschel, and Dan S. Wallach, Eclipse Attacks on Overlay Networks: Threats and Defenses, IEEE INFOCOM '06 (Barcelona, Spain), April 2006.

Animesh Nandi, Tsuen-Wan "Johnny" Ngan, Atul Singh, Peter Druschel, and Dan S. Wallach, Scrivener: Providing Incentives in Cooperative Content Distribution Systems, ACM/IFIP/USENIX 6th International Middleware Conference (Middleware 2005) (Grenoble, France), November 2005.

Andreas Haeberlen, Eliot Flannery, Andrew M. Ladd, Algis Rudys, Dan S. Wallach, and Lydia E. Kavasaki, Practical Robust Localization over Large-Scale 802.11 Networks, Tenth ACM International Conference on Mobile Computing and Networking (MOBICOM 2004) (Philadelphia, Pennsylvania), September 2004.

Tadayoshi Kohno, Adam Stubblefield, Aviel D. Rubin, Dan S. Wallach, Analysis of an Electronic Voting System, 2004 IEEE Symposium on Security and Privacy (Oakland, California), May 2004.

Scott Crosby and Dan S. Wallach, Denial of Service via Algorithmic Complexity Attacks, 12th Usenix Security Symposium (Washington, D.C.), August 2003.

David W. Price, Algis Rudys, and Dan S. Wallach, Garbage Collector Memory Accounting in Language-Based Systems, 2003 IEEE Symposium on Security and Privacy (Oakland, California), May 2003.

Eyal de Lara, Rajnish Kumar, Dan S. Wallach, and Willy Zwaenepoel, Collaboration and Multimedia Authoring on Mobile Devices, First International Conference on Mobile Systems, Applications, and Services (MobiSys '03) (San Francisco, California), May 2003.

Miguel Castro, Peter Druschel, Ayalvadi Ganesh, Antony Rowstron and Dan S. Wallach, Security for Peer-to-Peer Routing Overlays, Fifth Symposium on Operating Systems Design and Implementation (OSDI '02) (Boston, Massachusetts), December 2002.

Andrew M. Ladd, Kostas E. Bekris, Guillaume Marceau, Algis Rudys, Dan S. Wallach, and Lydia E. Kavasaki, Using Wireless Ethernet for Localization, 2002 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2002) (Lausanne, Switzerland), October 2002.

Andrew M. Ladd, Kostas E. Bekris, Guillaume Marceau, Algis Rudys, Lydia E. Kavasaki and Dan S. Wallach, Robotics-Based Location Sensing using Wireless Ethernet, Eighth ACM International Conference on Mobile Computing and Networking (MOBICOM 2002) (Atlanta, Georgia), September 2002.

Algis Rudys and Dan S. Wallach, Transactional Rollback for Language-Based Systems, The 2002 International Conference on Dependable Systems and Networks (DSN-2002) (Washington, D.C.), June 2002.

Cristian Coarfa, Peter Druschel, and Dan S. Wallach, Performance Analysis of TLS Web Servers, Network and Distributed Systems Security Symposium (San Diego, California), February 2002.

Eyal de Lara, Dan S. Wallach, and Willy Zwaenepoel, HATS: Hierarchical Adaptive Transmission Scheduling, Multimedia Computing and Networking 2002 (MMCN02) (San Jose, California), January 2002.

Jason Flinn, Eyal de Lara, M. Satyanarayanan, Dan S. Wallach, and Willy Zwaenepoel, Reducing the Energy Usage of Office Applications, *IFIP/ACM International Conference on Distributed Systems Platforms - Middleware 2001* (Heidelberg, Germany), November 2001.

Scott A. Craver, Min Wu, Bede Liu, Adam Stubblefield, Ben Swartzlander, Dan S. Wallach, Drew Dean, and Edward W. Felten, Reading Between the Lines: Lessons from the SDMI Challenge, *10th Usenix Security Symposium* (Washington, D.C.), August 2001.

Eyal de Lara, Dan S. Wallach and Willy Zwaenepoel, Puppeteer: Component-based Adaptation for Mobile Computing, *3rd Usenix Symposium on Internet Technologies and Systems (USITS '01)* (San Francisco, California), March 2001.

Algis Rudys, John Clements, and Dan S. Wallach, Termination in Language-based Systems, *Network and Distributed Systems Security Symposium* (San Diego, California), February 2001.

Eyal de Lara, Dan S. Wallach and Willy Zwaenepoel, Opportunities for Bandwidth Adaptation in Microsoft Office Documents, *4th Usenix Windows Systems Symposium* (Seattle, Washington), August 2000.

Dan S. Wallach and Edward W. Felten, Understanding Java Stack Inspection, *1998 IEEE Symposium on Security and Privacy* (Oakland, California), May 1998, pp. 52-63.

Dan S. Wallach, Dirk Balfanz, Drew Dean, and Edward W. Felten, Extensible Security Architectures for Java, *16th Symposium on Operating Systems Principles* (Saint-Malo, France), October 1997, pp. 116-128.

—*outstanding paper award*

Edward W. Felten, Dirk Balfanz, Drew Dean, and Dan S. Wallach, Web Spoofing: An Internet Con Game, *20th National Information Systems Security Conference* (Baltimore, Maryland), October 1996.

Drew Dean, Edward W. Felten, and Dan S. Wallach, Java Security: From HotJava to Netscape and Beyond, *1996 IEEE Symposium on Security and Privacy* (Oakland, California), May 1996, pp. 190-200.

Dan S. Wallach, Sharma Kunapalli and Michael F. Cohen, Accelerated MPEG Compression of Dynamic Polygonal Scenes, *Computer Graphics, SIGGRAPH 1994* (Orlando, Florida), August 1994, pp. 193-196.

Articles, Book Chapters, Etc.

Dan S. Wallach, Texas must confront voting systems' flaws, *Austin American-Statesman*, September 2004.

Jonathan Bannet, David W. Price, Algis Rudys, Justin Singer, Dan S. Wallach, Hack-a-Vote: Demonstrating Security Issues with Electronic Voting Systems, *IEEE Security & Privacy Magazine*, volume 2, number 1, January/February 2004, pp. 32-37. Also reprinted by *ComputerUser*, March 2004.

Dan S. Wallach, Copy Protection Technology is Doomed, *IEEE Computer*, volume 34, number 10, October 2001, pp. 48-49.

Drew Dean, Edward W. Felten, Dan S. Wallach, and Dirk Balfanz, Java Security: Web Browsers and Beyond, *Internet Beseiged: Countering Cyberspace Scofflaws*, D. E. Denning and P. J. Denning, Eds. ACM Press, New York, Oct. 1997, pp. 241-269.

PhD Dissertation

Dan S. Wallach, [A New Approach to Mobile Code Security](#), PhD Dissertation, Princeton University, January 1999.

Advised by [Edward W. Felten](#)

Workshop Papers

Seth James Nielson, Scott A. Crosby, and Dan S. Wallach, [A Taxonomy of Rational Attacks](#), *Fourth International Workshop on Peer-to-Peer Systems (IPTPS '05)* (Ithaca, New York), February 2005.

Alan Mislove, Gaurav Oberoi, Ansley Post, Charles Reis, Peter Druschel, and Dan S. Wallach, [AP3: Cooperative, Decentralized Anonymous Communication](#), *11th ACM SIGOPS European Workshop* (Leuven, Belgium), September 2004.

Tsuen-Wan "Johnny" Ngan, Animesh Nandi, Atul Singh, Dan S. Wallach, and Peter Druschel, [Designing Incentives-Compatible Peer-to-Peer Systems](#), *2nd Bertinoro Workshop on Future Directions in Distributed Computing (FuDiCo 2004)* (Bertinoro, Italy), June 2004.

Tsuen-Wan "Johnny" Ngan, Dan S. Wallach, and Peter Druschel, [Incentives-Compatible Peer-to-Peer Multicast](#), *2nd Workshop on Economics of Peer-to-Peer Systems* (Cambridge, Massachusetts), June 2004.

Ping Tao, Algis Rudys, Andrew Ladd, and Dan S. Wallach, [Wireless LAN Location Sensing for Security Applications](#), *ACM Workshop on Wireless Security (WiSe 2003)* (San Diego, California), September 2003.

Andrew Fuqua, Tsuen-Wan "Johnny" Ngan, and Dan S. Wallach, [Economic Behavior of Peer-to-Peer Storage Networks](#), *Workshop on Economics of Peer-to-Peer Systems* (Berkeley, California), June 2003.

Alan Mislove, Charles Reis, Ansley Post, Paul Willmann, Peter Druschel, Dan S. Wallach, Xavier Bonnaire, Pierre Sens, Jean-Michel Busca, Luciana Arantes-Bezerra, POST: [A Secure, Resilient, Cooperative Messaging System](#), *9th Workshop on Hot Topics in Operating Systems (HotOS IX)* (Lihue, Hawaii), May 2003.

Nathanael Paul, David Evans, Aviel D. Rubin, and Dan S. Wallach, [Authentication for Remote Voting](#), *Workshop on Human-Computer Interaction and Security Systems* (Fort Lauderdale, Florida), April 2003.

Tsuen-Wan "Johnny" Ngan, Dan S. Wallach, and Peter Druschel, [Enforcing Fair Sharing of Peer-to-Peer Resources](#), *2nd International Workshop on Peer-to-Peer Systems (IPTPS '03)* (Berkeley, California), February 2003.

Algis Rudys and Dan S. Wallach, [Enforcing Java Run-Time Properties Using Bytecode Rewriting](#), *International Symposium on Software Security* (Tokyo, Japan), November 2002.

Dan S. Wallach, [A Survey of Peer-to-Peer Security Issues](#), *International Symposium on Software Security* (Tokyo, Japan), November 2002.

Yuri Dotsenko, Eyal de Lara, Dan S. Wallach, and Willy Zwaenepoel, [Extensible Adaptation via Constraint Solving](#), *4th IEEE Workshop on Mobile Computing Systems & Applications* (Callicoon, New York), June 2002.

Eyal de Lara, Rajnish Kumar, Dan S. Wallach, and Willy Zwaenepoel, [Collaboration and Document Editing on Bandwidth-Limited Devices](#), *Proceedings of the Workshop on*

Application Models and Programming Tools for Ubiquitous Computing (UbiTools '01) (Atlanta, Georgia), September 2001.

Eyal de Lara, Dan S. Wallach, and Willy Zwaenepoel, Position Summary: Architectures for Adaptation Systems, *Eighth IEEE Workshop on Hot Topics in Operating Systems (HotOS-VIII)* (Schloss Elmau, Germany), May 2001.

Y. Charie Hu, Weimin Yu, Alan L. Cox, Dan S. Wallach, and Willy Zwaenepoel, Runtime Support for Distributed Sharing in Typed Languages, *Proceedings of LCR2000: the Fifth Workshop on Languages, Compilers, and Run-time Systems for Scalable Computers* (Rochester, New York), May 2000.

Dan S. Wallach, Jim A. Roskind, and Edward W. Felten, Flexible, Extensible Java Security Using Digital Signatures, *Network Threats* (New Brunswick, New Jersey), December 1996, R. N. Wright and P. G. Neumann, Eds., vol. 38 of *DIMACS Series in Discrete Mathematics and Theoretical Computer Science*, American Mathematical Society, pp. 59-74.

Tech Reports / Miscellaneous

Dan S. Wallach, "Expert Report in *Conroy v. Dennis*" (portions redacted), September 2006.

Dan S. Wallach, "Security and Reliability of Webb County's ES&S Voting System and the March '06 Primary Election" (Expert Report in *Flores v. Lopez*), May 2006.

Seth Nielson, Seth J. Fogarty, and Dan S. Wallach, Attacks on Local Searching Tools, Technical Report TR-04-445, Department of Computer Science, Rice University, December 2004.

Dan S. Wallach, Testimony for the NIST/EAC Technical Guidelines Development Committee (Gaithersburg, Maryland), September 2004.

Dan S. Wallach, Testimony for the Texas Senate Committee on State Affairs (Austin, Texas), May 2004.

Dan S. Wallach, Testimony for the Texas House Elections Committee (Austin, Texas), March 2004.

Dan S. Wallach, Testimony for the Ohio Joint Committee on Ballot Security (Columbus, Ohio), March 2004.

Jonathan Bannet, David W. Price, Algis Rudys, Justin Singer, Dan S. Wallach, Hack-a-Vote: Demonstrating Security Issues with Electronic Voting Systems, Technical Report TR-03-427, Department of Computer Science, Rice University, November 2003.

Tadayoshi Kohno, Adam Stubblefield, Aviel D. Rubin, Dan S. Wallach, Analysis of an Electronic Voting System, Johns Hopkins Information Security Institute Technical Report TR-2003-19, July 2003.

David L. Dill, Rebecca Mercuri, Peter G. Neumann, and Dan S. Wallach, Frequently Asked Questions about DRE Voting Systems (web page, also submitted to Santa Clara County board of supervisors), February 2003.

David W. Price, Algis Rudys, and Dan S. Wallach, Garbage Collector Memory Accounting in Language-Based Systems, Technical Report TR-02-407, Department of Computer Science, Rice University, December 2002.

Adam B. Stubblefield and Dan S. Wallach, Dogster: Censorship-Resistant Publishing Without Replication, Technical Report TR01-380, Department of Computer Science, Rice University,

July 2001.

Alex Grosul and Dan S. Wallach, A Related-Key Cryptanalysis of RC4, Technical Report TR-00-358, Department of Computer Science, Rice University, June 2000.

Adam B. Stubblefield and Dan S. Wallach, A Security Analysis of My.MP3.com and the Beam-it Protocol, Technical Report TR-00-353, Department of Computer Science, Rice University, February 2000.

Eyal de Lara, Dan S. Wallach, and Willy Zwaenepoel, A Characterization of Compound Documents on the Web, Technical Report TR-99-351, Department of Computer Science, Rice University, November 1999.

Invited Panels

Steve Ansolabehere, *et al.*, Workshop on Developing a Research Agenda for Electronic Voting Technologies, American Association for the Advancement of Science (AAAS), September 2004.

Darleen Fisher, *et al.*, NSF Workshop on Security and Privacy (Berkeley, California), February 2002. *Publication pending.*

Gary McGraw, *et al.*, Attacking Malicious Code. A Report from the Infosec Research Council (San Antonio, Texas), April, 2000. Report published in *IEEE Software* 17(5), pp. 33-40.

Teaching

Courses at Rice:

Comp527: Computer Systems Security (Spring 1999, Fall and Spring 2000, Fall 2001-2006)

Comp435: Election Systems, Technology, and Administration (Fall 2006)

Comp314: Applied Algorithms and Data Structures (Fall 1999, Spring 2001, 2002, 2004-2006)

Comp620: Seminar in Secure Systems (Fall 1998)

Short courses and tutorials:

Dan S. Wallach, Language-Based Security (a one-week intensive short course), presented at *The Summer School on Foundations of Internet Security* (Duszniki Zdrój, Poland), June 2002.

Dan S. Wallach and Drew Dean, Java and Security (a one-week intensive short course), Katholieke Universiteit Leuven (Leuven, Belgium), March 1997.

Teaching assistant positions at Princeton:

Introduction to Computer Systems (Spring 1996)

Computer Graphics (Fall 1993, Fall 1994, and Fall 1995)

Advanced Programming Techniques (Spring 1994)

Professional Service

Research management:

Associate Director, ACCURATE (NSF-funded research center), 2005-2010

Program committees:

ACM Conference on Computer and Communications Security (CCS) 2004 and 2005

ACM Conference on Electronic Commerce 2007

ACM Role-Based Access Control Workshop 1999 and 2000
 Applied Cryptography and Network Security (ACNS) 2005
 HotOS Workshop 2003
 HotSec Workshop 2006
 IEEE International Conference on Distributed Computing Systems (ICDCS) 2007
 IEEE Security and Privacy 1999, 2004, 2005, and 2007
 IEEE Workshop on Mobile Computing Systems and Applications (WMCSA) 2002 and 2004
 International Peer-to-Peer Symposium (IPTPS) 2004 and 2006
 Network and Distributed Systems Security Symposium (NDSS) 2002-2004 and 2006
 NSF grant panels 2002, 2004, 2005, 2006
 South Central Information Security Symposium 2003-2006
 Usenix Annual Conference 2001
 Usenix Security Symposium 1999-2003 and 2005
 Usenix Symposium on Internet Technologies and Systems (USITS) 2003
 Workshop on Economics in Peer-to-Peer Systems 2004
 WWW Conference 1999, 2000, 2003, 2004, 2006, and 2007

Program committee chair:

Usenix Security Symposium 2001
Usenix/ACCURATE Electronic Voting Workshop 2006
WWW Conference, Co-Chair of Security, Privacy, Reliability, and Ethics Track 2007

Invited talks coordinator:

Usenix Security Symposium 2002

Panel moderator/organizer (electronic voting security):

Usenix Security Symposium 2003
 IEEE Symposium on Security and Privacy 2004

Workshop organizer:

South Central Information Security Symposium 2003-2006

Editorial and advisory board memberships:

Election Science Institute (VoteWatch)
IEEE Internet Computing (2004-2006)
International Journal of Information Security
International Journal of Information and Computer Security
International Journal for Infonomics
National Committee for Voting Integrity
Verified Voting Foundation / VerifiedVoting.org

University committees:

Advisor for MCS Students (2000-2001)
 CS Graduate Admissions (1998-2005)
 CS Curriculum Committee (2005-present)
 CS Facilities (occasional involvement)
 KTRU (Rice Radio) Friendly Committee (2005-present)
 University IT Security Committee (2002-present)

Other university service:

Divisional advisor and faculty associate, Martel College (2001-present)
 Rice Social Dance Society: faculty sponsor, instructor, workshop organizer, etc.
 (2001-present)

Grants

Aviel D. Rubin, Dan S. Wallach, Michael Byrne, Douglas W. Jones, David Dill, Dan Boneh, David A. Wagner, Dierdre Mulligan, Drew Dean, and Peter G. Neumann, CT-CS: A Center for Correct, Usable, Reliable, Auditable, and Transparent Elections (ACCURATE), NSF CNS-0524211 (October 2005).

Dan S. Wallach and Peter Druschel, CSR/PDOS: Security and Incentives for Overlay Network Infrastructure, NSF CNS-0509297 (August 2005).

Dan S. Wallach and Mike Dahlin, Resource Management for Safe Deployment of Edge Services, Texas Advanced Technology Program #003604-0053-2001 (October 2001).

Dan S. Wallach, Security and Resource Management in Type-Safe Language Environments, NSF CAREER CCR-9985332 (March 2000).

Behnaam Aazhang, Richard G. Baraniuk, Joseph R. Cavallaro, Edward W. Knightly, and Dan S. Wallach, Seamless Multitier Wireless Networks for Multimedia Applications, NSF Special Projects ANI-9979465 (April 1999).

Industrial gifts and support:

Microsoft gift (November 2002)
 Schlumberger gift (February 2002)
 IBM University Partnership Program (June 2000)
 Microsoft gift (July 2000)

Related support:

Useenix Student Scholarship for Adam Stubblefield (May 2001)

Invited Talks and Panels

Dan S. Wallach, *Electronic Voting: Risks and Research*, Institute for Security Technology Studies Distinguished Speaker Series, Dartmouth College (Hanover, New Hampshire), October 2006.

Dan S. Wallach, *Electronic Voting: Risks and Research*, Max Planck Institute for Software Systems (Saarbrücken, Germany), October 2006.

Dan S. Wallach, *Electronic Voting: Risks and Research*, , Chaire Internationale en Sécurité Informatique, Institut Eurécom (Sophia Antipolis, France), October 2006.

Dan S. Wallach, *Electronic Voting: Risks and Research*, University of Texas at Austin (Austin, TX), September 2006.

Dan S. Wallach, *The Risks of Electronic Voting*, Election Protection Summit (Washington, D.C.), June 2006.

Dan S. Wallach, *Computer Security Education at Rice*, Workshop on Information Assurance Education (Houston, Texas), May 2006.

Dan S. Wallach, *The Risks of Electronic Voting*, Georgia Institute of Technology (Atlanta, Georgia), March 2006.

Dan S. Wallach, Testimony for the California Senate Elections, Reapportionment & Constitutional Amendments Committee (Menlo Park, California), February 2006.

Elizabeth Hanshaw Winn and Dan S Wallach, *Panel: Electronic Voting Technology*, First Annual

Legislative and Public Policy Conference, TSU Thurgood Marshall School of Law (Houston, Texas), October 2005.

Paul Craft, Douglas Jones, John Kelsey, Ronald Rivest, Michael Shamos, Dan Tokaji, Dan S. Wallach, *Panel: Threat Discussion on Trojan Horses, Backdoors, and Other Voting System Software-Related Problems*, NIST Workshop on Threats to Voting Systems (Gaithersburg, Maryland), October 2005.

Dan S. Wallach, *The Risks of Electronic Voting*, Virginia Joint Committee Studying Voting Equipment (Richmond, Virginia), August 2005.

Dan S. Wallach, *The Risks of Electronic Voting*, Tarrant County Democratic Party Meeting (Hurst, Texas), July 2005.

Dan S. Wallach, *Electronic Voting Machine / Registration Systems*, Testimony for the Carter-Baker Commission on Federal Election Reform (Houston, Texas), June 2005.

Dan S. Wallach, *The Risks of Electronic Voting*, NSF Workshop on Cyberinfrastructure and the Social Sciences (Arlington, Virginia), March 2005.

Dan S. Wallach, *The Risks of Electronic Voting*, CASSIS: Construction and Analysis of Safe, Secure, and Interoperable Smart Devices (Nice, France), March 2005.

Dan S. Wallach, *The Risks of Electronic Voting*, University of Massachusetts, Amherst, Five Colleges Information Assurance Lecture Series (Amherst, Massachusetts), December 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, University of Iowa, Department of Computer Science (Iowa City, Iowa), December 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, CSI's 31st Annual Computer Security Conference (Washington, D.C.), November 2004.

Hans Klein, Eugene Spafford, Donald Moynihan, Dan S. Wallach, and Jim Reiss, *Panel: E-Voting Policies and Perils*, Association for Public Policy Analysis and Management (APPAM) (Atlanta, Georgia), October 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, Seventh Workshop on Languages, Compilers, and Run-time Support for Scalable Systems (Houston, Texas), October 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, Symposium on the 2004 Presidential Election, John J. Marshall Law School (Chicago, Illinois), October 2004.

Chris Bell, Dan S. Wallach, and Tony J. Servello III, *Panel: Electronic Voting*, Science Café (Houston, Texas), October 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, The Integrity of the Election Process, U. of Toledo Law School (Toledo, Ohio), October 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, Princeton University, Department of Computer Science (Princeton, New Jersey), October 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, DIMACS Workshop on Cryptography: Theory Meets Practice (Piscataway, New Jersey), October 2004.

Dan S. Wallach, Michael I. Shamos, Eugene Spafford, and Michael E. Lavelle, *Panel: Who Can Plug Into E-Voting Machines?*, Election 2004: Is E-Voting Ready for Prime Time?, John Marshall Law School (Chicago, Illinois), October 2004.

Dan S. Wallach, *Testimony for the NIST/EAC Technical Guidelines Development Committee*

(Gaithersburg, Maryland), September 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, DiverseWorks: The Voting Machine (Houston, Texas), September 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, Baker Institute Forum on Electronic Voting (Houston, Texas), September 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, League of Women Voters General Meeting (Houston, Texas), September 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, Simposio acerca de Urnas Electrónicas para la Emisión del Voto Ciudadano (Mexico City, Mexico), September 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, Fermi National Accelerator Lab (Batavia, Illinois), August 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, TrueMajority "National Day of Action" (Austin, Texas), July 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, 10th Annual County and District Clerks' Association of Texas Conference (Lake Conroe, Texas), June 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, Texas State Democratic Party Convention, Progressive Populist Caucus (Houston, Texas), June 2004.

Dan S. Wallach, *Hack-a-Vote: Demonstrating Security Issues with Electronic Voting Machines*, DIMACS Workshop on Electronic Voting - Theory and Practice (Piscataway, New Jersey), May 2004.

Dan S. Wallach, Testimony for the Texas Senate Committee on State Affairs (Austin, Texas), May 2004.

Josh Benaloh, Dana DeBeauvoir, and Dan S. Wallach, *Panel: Electronic Voting Security*, IEEE Symposium on Security and Privacy (Oakland, California), May 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, Harris County Democrats (Houston, Texas), April 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, North Brazoria County Democrats (Pearland, Texas), April 2004.

Dana DeBeauvoir, Ann McGeehan, Dan S. Wallach, *Panel on the Security of Electronic Voting*, League of Women Voters (Austin, Texas), April 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, Guest lecture in "Texas Political Parties and Elections" (Government 335N, University of Texas, Austin), March 2004.

Dan S. Wallach, Testimony for the Texas House Elections Committee (Austin, Texas), March 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, Bell County Republican Convention (Belton, Texas), March 2004.

Dan S. Wallach, Testimony for the Ohio Joint Committee on Ballot Security (Columbus, Ohio), March 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, Houston Peace Forum (First Unitarian Universalist Church, Houston, Texas), March 2004.

Ben Cohen and Dan S. Wallach, *TrueMajority Press Event* (Washington, D.C.) February, 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, European Commission eDemocracy Seminar (Brussels, Belgium), February, 2004.

Dana DeBeauvoir, Dan S. Wallach, Ann McGeehan, Bill Stotesbery, Adina Levin, *Electronic Voting: Benefits & Risks*, First Unitarian Universalist Church of Austin (panel co-sponsored by Travis County Green Party and Austin Democracy Coalition) (Austin, Texas), January 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, Texas IMPACT / United Methodist Women (Austin, Texas), January 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, River Oaks Democratic Women (Houston, Texas), January 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, University of Michigan, Department of Computer Science (Ann Arbor, Michigan), January 2004.

Dan S. Wallach, *The Risks of Electronic Voting*, EFF-Austin Policy Roundtable (Austin, Texas), December 2003.

Dan S. Wallach, *O.S. Security Semantics for Language-based Systems*, Katholieke Universiteit Leuven (Leuven, Belgium), December 2003.

Dan S. Wallach, *O.S. Security Semantics for Language-based Systems*, Belgium Java User's Group: JavaPolis (Antwerp, Belgium), December 2003.

Dan S. Wallach, *The Risks of Electronic Voting*, Austin Pastoral Center (Austin, Texas), November 2003.

Dan S. Wallach, *Peer-to-Peer Security*, Cornell University, Department of Computer Science (Ithaca, New York), November 2003.

Dan S. Wallach, *The Risks of Electronic Voting*, Duke University, Department of Computer Science (Durham, North Carolina), October 2003.

Dan S. Wallach, *The Risks of Electronic Voting*, University of Arizona, Department of Computer Science (Tucson, Arizona), September 2003.

Dan S. Wallach, *Peer-to-Peer Security*, UW/MSR/CMU Software Security Summer Institute (Stevenson, Washington), June 2003.

Dan S. Wallach, *Peer-to-Peer Security*, Stanford University, Department of Computer Science (Stanford, California), May 2003.

Dan S. Wallach, *Adventures in Copy Protection Research*, The Hockaday School (Dallas, Texas), April 2003.

Dan S. Wallach, *Adventures in Copy Protection Research*, Formal Techniques for Networked and Distributed Systems (Houston, Texas), November 2002.

Dan S. Wallach, *Peer-to-Peer Security*, Oregon Graduate Institute (Portland, Oregon), March 2002.

Dan S. Wallach, *Mobile Code Security Through Program Transformations*, Mathematical Foundations of Programming Semantics (New Orleans, Louisiana), March 2002.

Dan S. Wallach, *The Risks of E-Voting Machines*, Bay Area New Democrats (Houston, Texas), November 2001.

Dan S. Wallach, Testimony before the Houston City Council on the risks of electronic voting systems, July 2001.

Dan S. Wallach, *Adventures in Copy Protection Research*, Open Group Meeting (Austin, Texas), July 2001.

Dan S. Wallach, *Adventures in Copy Protection Research*, Houston Copyright Town Hall Meeting (Houston, Texas), April, 2001.

Dan S. Wallach, *Mobile Code Security Through Program Transformations*, U.C. Berkeley (Berkeley, California), March 2001.

Dan S. Wallach, *Mobile Code Security Through Program Transformations*, University of Texas (Austin, Texas), November 2000.

Dan S. Wallach, *Mobile Code Security Through Program Transformations*, International Workshop on Mobile Objects/Code and Security (Tokyo, Japan), October 2000.

Dan S. Wallach and John DeRose, *The Security of My.MP3.com and Other "Beaming" Technologies*, MP3 Summit (San Diego, California), June 2000.

Dan S. Wallach, *An Overview of Computer Security*, Law Practice Management Section of the Houston Bar Association (Houston, Texas), May 2000.

- Wallach has also spoken to visiting groups of high school students via a Rice outreach program organized by Jen Overton.

Advisees

Completed PhDs:

Eyal de Lara (PhD completed January '03, now a professor at the University of Toronto)

Recent graduate researcher collaborators (* = Wallach is current, primary advisor):

Konstantinos Bekris
Cristian Coarfa
Scott Crosby*
Anwis Das (current at Google)
Yuri Dotsenko
Tadayoshi Kohno (professor at University of Washington)
Rajnish Kumar
Andrew Ladd
Alan Mislove
Animesh Nandi
Seth Nielson*
Tsuen Wan "Johnny" Ngan (currently at Symantec Research)
Ainsley Post
Algis Rudys (currently at Google)
Atul Singh
Adam Stubblefield (Johns Hopkins)
Ping Tao

Recent undergraduate researchers:

Jonathan Bannet
Kyle Derr
Eliot Flannery
Andrew Fuqua

David Wray Price (JD from Stanford, now clerking for the Federal Circuit, Patent Appeals Court)
 Adam Stubblefield (2002 CRA Outstanding Male Undergraduate Award)
 Andy Thomas
 Ted Torous

Consulting *Private Consulting:*

AT&T Research (fall 2001, collaborating with Avi Rubin on security research)
GalleryFurniture (August 2001, post-attack web site audit and reinstall)
Curl (December 2000, security architecture review)
Quaadros Technologies (October 2000, design review)
Cloakware (September 2000 and August 2001, design review)
Coral Technologies (December 1999, security audit)
MetaCreations (March 2000, security audit)
CenterPoint Ventures (ongoing, technical evaluations of startups)
Rho Ventures (ongoing, technical evaluations of startups)

Legal Consulting (Election-related):

Conroy et al. v. Dennis (Colorado Sec. of State) (September 2006, expert for plaintiffs)
 Santana et al. v. Williams (Texas Sec. of State) and DeBeauvoir (Travis County Clerk) (July 2006, expert for plaintiffs)
 Taylor et al. v. Cortés (Pennsylvania Sec. of Commonwealth) (April 2006, expert for plaintiffs)
 Bruni v. Valdes and Benavides (April 2006, expert for Bruni)
 Flores v. Lopez (April 2006, expert for Flores)
 ACLU v. Connor (Texas Sec. of State) (February 2005, expert for the ACLU)

Legal Consulting (Other):

Autobytel v. Dealix (May 2005, expert for Dealix)
 Soverain v. Amazon.com (April 2005, expert for Amazon.com)
 Uniloc v. Microsoft (November 2004, expert witness for Microsoft)
 Nash v. Microsoft (May 2004, expert witness for Microsoft)
 Recruitsoft v. Hire.com (August 2003, expert witness for Hire.com)
 DirecTV v. NDS (April 2003, expert witness for DirecTV)
 RIAA v. MP3.com (February 2000, wrote declaration for MP3.com)

Employment Rice University, Associate professor, Department of Computer Science, beginning October 1998.
History (Promoted from assistant professor in May 2005.)

- 9/93 - 10/98 Princeton University, Graduate student, Department of Computer Science. Supported by grants from NSF, Sun Microsystems, Intel, Microsoft, and others.
- 6/97 - 8/97 Netscape Communications Corporation, Mountain View, California.
 Integrated Java with SSL. Audited the CORBA and RMI implementations for security bugs. Wrote a CORBA demonstration (a chat server).
- 6/96 - 8/96 Netscape Communications Corporation, Mountain View, California.
 Designed and implemented a privilege-based security mechanism and user interface to enable digitally-signed Java applets. Participated in design reviews of several Netscape and JavaSoft technologies.
- 6/95 - 8/95 Microsoft Corporation, Redmond, Washington.

Wrote a converter from Softimage to a RenderMorphics-based system (V-Chat). Designed and implemented a polygonal model compression system for virtual reality applications.

6/94 - 8/94 David Sarnoff Research Center, Princeton, New Jersey.

Wrote a microcode-level simulator for parallel video processing engine. Wrote design documents for the client side of a future video-on-demand system.

6/93 - 8/93 Berkeley Systems, Berkeley, California.

Ported a screen-reading system (allowing blind people to use graphical user interfaces) from Microsoft Windows to X.

9/92 - 6/93 U.C. Berkeley, Research Assistant for Dr. Larry Rowe.

Implemented parts of a MPEG-1 video encoder. Wrote the audio support for a real-time distributed media-on-demand system.

Appendix B to Declaration of Dan S. Wallach

APPENDIX B TO WALLACH DECLARATION

An example of an event log:

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WEBS COUNTY, TEXAS
PRIMARY ELECTION
MARCH 7, 2006 RE-COUNT LOG
ELECTION ID 6PTXW2B8

RUN DATE 03/24/06 02:14 PM

Vol: 6012 PER# Type Date Time Event
5117865 161061 SUP 03/07/2006 16:31:12 01 Terminal clear and test
161126 SUP 03/07/2006 07:09:37 09 Terminal open
03/07/2006 07:13:50 13 Print zero tape
03/07/2006 07:15:39 13 Print zero tape
160973 SUP 03/07/2006 12:32:24 20 Normal ballot cast
03/07/2006 14:59:19 20 Normal ballot cast
03/07/2006 16:04:23 20 Normal ballot cast
03/07/2006 16:25:54 20 Normal ballot cast
03/07/2006 18:32:18 20 Normal ballot cast
03/07/2006 18:48:54 20 Normal ballot cast
03/07/2006 18:56:03 20 Normal ballot cast
03/07/2006 19:01:32 20 Normal ballot cast
161126 SUP 03/07/2006 19:39:41 10 Terminal close

5140052 161061 SUP 03/07/2006 15:29:03 01 Terminal clear and test
160980 SUP 03/07/2006 15:31:15 09 Terminal open
03/07/2006 15:34:47 13 Print zero tape
03/07/2006 15:36:36 13 Print zero tape
160999 SUP 03/07/2006 15:56:50 20 Normal ballot cast
03/07/2006 16:47:12 20 Normal ballot cast
03/07/2006 18:07:29 20 Normal ballot cast
03/07/2006 18:17:03 20 Normal ballot cast
03/07/2006 18:37:24 22 Super ballot cancel
03/07/2006 18:41:18 20 Normal ballot cast
03/07/2006 18:46:23 20 Normal ballot cast
160980 SUP 03/07/2006 19:07:14 10 Terminal close

5140148 160957 SUP 03/07/2006 08:27:11 01 Terminal clear and test
160930 SUP 03/07/2006 08:54:17 09 Terminal open
159979 SUP 03/07/2006 12:55:43 20 Normal ballot cast
03/07/2006 12:34:30 20 Normal ballot cast
03/07/2006 18:21:03 22 Super ballot cancel
03/07/2006 18:23:53 20 Normal ballot cast
160990 SUP 03/07/2006 19:08:32 10 Terminal close

5141714 161061 SUP 03/07/2006 19:31:38 01 Terminal clear and test
174809 SUP 03/07/2006 04:28:56 09 Terminal open
174804 SUP 03/07/2006 08:12:48 20 Normal ballot cast
03/07/2006 11:44:18 20 Normal ballot cast
03/07/2006 12:01:25 20 Normal ballot cast
03/07/2006 12:06:46 20 Normal ballot cast
03/07/2006 12:32:55 20 Normal ballot cast
03/07/2006 12:09:49 20 Normal ballot cast
03/07/2006 12:27:31 20 Normal ballot cast
03/07/2006 14:28:04 20 Normal ballot cast
03/07/2006 14:44:26 20 Normal ballot cast
03/07/2006 14:57:31 20 Normal ballot cast
03/07/2006 17:19:54 20 Normal ballot cast
03/07/2006 17:38:37 20 Normal ballot cast
03/07/2006 17:45:27 20 Normal ballot cast
03/07/2006 17:51:42 20 Normal ballot cast
03/07/2006 18:04:22 20 Normal ballot cast
03/07/2006 18:14:04 20 Normal ballot cast
03/07/2006 18:40:21 20 Normal ballot cast
03/07/2006 18:53:11 20 Normal ballot cast
03/07/2006 18:56:28 20 Normal ballot cast
03/07/2006 19:03:57 20 Normal ballot cast
03/07/2006 19:07:33 20 Normal ballot cast
03/07/2006 19:29:50 20 Normal ballot cast

WEBS COUNTY, TEXAS
PRIMARY ELECTION
MARCH 7, 2006 RE-COUNT LOG
ELECTION ID 6PTXW2B8

RUN DATE 03/24/06 02:14 PM

Vol: 6012 PER# Type Date Time Event
5141714 174809 SUP 03/07/2006 19:42:45 10 Terminal close

5141719 161061 SUP 02/26/2006 12:24:10 01 Terminal clear and test
161118 SUP 03/07/2006 07:18:05 09 Terminal open
160992 SUP 03/07/2006 08:44:39 20 Normal ballot cast
03/07/2006 09:29:58 20 Normal ballot cast
03/07/2006 10:24:00 20 Normal ballot cast
03/07/2006 12:17:25 20 Normal ballot cast
03/07/2006 12:39:49 20 Normal ballot cast
03/07/2006 13:00:09 20 Normal ballot cast
03/07/2006 14:16:55 20 Normal ballot cast
03/07/2006 14:32:43 20 Normal ballot cast
03/07/2006 16:03:04 20 Normal ballot cast
03/07/2006 17:01:53 20 Normal ballot cast
03/07/2006 17:07:45 20 Normal ballot cast
03/07/2006 17:16:47 20 Normal ballot cast
03/07/2006 17:14:21 20 Normal ballot cast
03/07/2006 17:40:58 20 Normal ballot cast
03/07/2006 18:16:29 20 Normal ballot cast
03/07/2006 18:23:06 20 Normal ballot cast
161118 SUP 03/07/2006 19:14:35 10 Terminal close

5141721 160999 SUP 03/07/2006 08:42:44 01 Terminal clear and test
161131 SUP 03/07/2006 12:20:13 09 Terminal open
161124 SUP 03/07/2006 12:37:29 22 Super ballot cancel
03/07/2006 12:39:41 20 Normal ballot cast
03/07/2006 12:49:40 20 Normal ballot cast
03/07/2006 13:01:22 20 Normal ballot cast
03/07/2006 13:05:40 20 Normal ballot cast
03/07/2006 13:11:14 20 Normal ballot cast
03/07/2006 13:18:10 20 Normal ballot cast

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03/07/2006 13:53:58 20 Normal ballot cast
03/07/2006 14:02:06 20 Normal ballot cast
03/07/2006 14:07:28 20 Normal ballot cast
03/07/2006 14:16:49 20 Normal ballot cast
03/07/2006 14:30:46 20 Normal ballot cast
03/07/2006 15:24:52 20 Normal ballot cast
03/07/2006 16:26:03 20 Normal ballot cast
03/07/2006 16:29:44 20 Normal ballot cast
03/07/2006 16:33:15 20 Normal ballot cast
03/07/2006 16:42:36 20 Normal ballot cast
03/07/2006 17:15:38 20 Normal ballot cast
03/07/2006 17:18:14 20 Normal ballot cast
03/07/2006 17:33:15 20 Normal ballot cast
03/07/2006 17:48:54 20 Normal ballot cast
03/07/2006 18:01:07 20 Normal ballot cast
03/07/2006 18:29:14 20 Normal ballot cast
03/07/2006 18:31:48 20 Normal ballot cast
03/07/2006 18:39:35 20 Normal ballot cast
03/07/2006 18:46:18 20 Normal ballot cast
03/07/2006 18:50:42 20 Normal ballot cast
03/07/2006 18:56:40 20 Normal ballot cast
03/07/2006 19:05:39 20 Normal ballot cast
03/07/2006 19:12:34 20 Normal ballot cast
03/07/2006 19:19:50 10 Terminal close
161111 SUP
5141829 161061 SUP 02/27/2006 19:43:15 01 Terminal clear and test
160962 SUP 03/07/2006 06:53:31 09 Terminal open
160963 SUP 03/07/2006 07:45:23 20 Normal ballot cast
03/07/2006 08:42:41 20 Normal ballot cast

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An example of a ballot image log:

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WERB COUNTY, TEXAS
PRIMARY ELECTION
MARCH 7, 2006 RE-COUNT LOG
PRECINCT 1 - PRECINCT 401
ELECTION ID 6PTXWERB

RUN DATE:03/24/06 02:16 PM

VOTR B/S CANDIDATES RECEIVING A VOTE
5141719 2 * 2 Gerrit Reece Hunter DEM - United States Senator
5141719 2 4 Rick Bolanos DEM - United States Representative, Dist 23 USREP23
5141719 2 5 Chris Bell DEM - Governor
5141719 2 9 Adrian De Leon DEM - Lieutenant Governor
5141719 2 11 David Van Os DEM - Attorney General
5141719 2 12 Fred Head DEM - Comptroller of Public Accounts
5141719 2 13 Valinda Hathcox DEM - Commissioner of the General Land Office
5141719 2 14 Hank Gilbert DEM - Commissioner of Agriculture
5141719 2 16 Dale Henry DEM - Railroad Commissioner
5141719 2 17 William E. "Bill" Moody DEM - Justice, Supreme Court, Place 2
5141719 2 18 J. R. Molina DEM - Presiding Judge, Court of Criminal Appa
5141719 2 19 Rene Nuñez DEM - Member, State Board of Education, Distr
5141719 2 21 Mercurio Martinez Jr. DEM - State Representative, District 42 REP042
5141719 2 24 Catherine Stone DEM - Appeals Court Justice Dist 4 P2
5141719 2 25 Richard Garcia Jr. DEM - Appeals Court Justice Dist 4 P3
5141719 2 26 Dan Pozza DEM - Appeals Court Justice Dist 4 P4
5141719 2 27 Lauro A. Bustamante DEM - Appeals Court Justice Dist 4 P5
5141719 2 28 Eddie De la Garza DEM - Appeals Court Justice Dist 4 P7
5141719 2 30 Manuel R. Flores DEM - District Judge, Judicial District
5141719 2 31 Raul Vasquez DEM - District Judge, 11th Judicial District
5141719 2 34 Danny Valdez DEM - County Judge
5141719 2 36 Alvin "Ben" Morales DEM - Judge, County Court at Law
5141719 2 38 Jesus "Chuy" Garza DEM - Judge, County Court at Law 2
5141719 2 40 Manuel "Memo" Gutierrez DEM - District Clerk
5141719 2 43 Esther Degollado DEM - County Clerk
5141719 2 45 Javier Martinez DEM - County Treasurer
5141719 2 51 Sergio "Keko" Martinez DEM - County Commissioner, Precinct No. 4 COM004
5141719 2 59 Oscar Rene Lledo DEM - Justice of the Peace, Pct 1 P2 JOP012
5141719 2 61 Javier Montemayor, Jr. DEM - County Chairman
5141719 2 95 For DEM - Referendum 1
5141719 2 97 For DEM - Referendum 2
5141719 2 * 20 Richard Raymond DEM - State Representative, District 42 REP042
5141719 2 35 Louis R. Bruni DEM - County Judge
5141719 2 39 Diana Navarro DEM - Judge, County Court at Law 2
5141719 2 41 Esther Degollado DEM - County Clerk
5141719 2 45 Javier Martinez DEM - County Treasurer
5141719 2 51 Sergio "Keko" Martinez DEM - County Commissioner, Precinct No. 4 COM004
5141719 2 * 2 Gerrit Reece Hunter DEM - United States Senator
5141719 2 4 Rick Bolanos DEM - United States Representative, Dist 23 USREP23
5141719 2 5 Chris Bell DEM - Governor
5141719 2 9 Adrian De Leon DEM - Lieutenant Governor
5141719 2 11 David Van Os DEM - Attorney General
5141719 2 12 Fred Head DEM - Comptroller of Public Accounts
5141719 2 13 Valinda Hathcox DEM - Commissioner of the General Land Office
5141719 2 14 Hank Gilbert DEM - Commissioner of Agriculture
5141719 2 16 Dale Henry DEM - Railroad Commissioner
5141719 2 17 William E. "Bill" Moody DEM - Justice, Supreme Court, Place 2
5141719 2 18 J. R. Molina DEM - Presiding Judge, Court of Criminal Appa
5141719 2 21 Mercurio Martinez Jr. DEM - State Representative, District 42 REP042
5141719 2 24 Catherine Stone DEM - Appeals Court Justice Dist 4 P2
5141719 2 25 Richard Garcia Jr. DEM - Appeals Court Justice Dist 4 P3
5141719 2 26 Dan Pozza DEM - Appeals Court Justice Dist 4 P4
5141719 2 27 Lauro A. Bustamante DEM - Appeals Court Justice Dist 4 P5
5141719 2 28 Eddie De la Garza DEM - Appeals Court Justice Dist 4 P7
5141719 2 29 Joe Lopez DEM - District Judge, Judicial District
5141719 2 31 Raul Vasquez DEM - District Judge, 11th Judicial District
5141719 2 34 Danny Valdez DEM - County Judge
5141719 2 36 Alvin "Ben" Morales DEM - Judge, County Court at Law
5141719 2 38 Jesus "Chuy" Garza DEM - Judge, County Court at Law 2

WERB COUNTY, TEXAS
PRIMARY ELECTION
MARCH 7, 2006 RE-COUNT LOG
PRECINCT 1 - PRECINCT 401
ELECTION ID 6PTXWERB

RUN DATE:03/24/06 02:16 PM

VOTR B/S CANDIDATES RECEIVING A VOTE
5141719 2 40 Manuel "Memo" Gutierrez DEM - District Clerk
5141719 2 42 Margie Ramirez Ibarra DEM - County Clerk
5141719 2 44 Adolfo "Papo" Gonzalez DEM - County Treasurer
5141719 2 49 Rodolfo "Rudy" Lerma Jr. DEM - County Commissioner, Precinct No. 4 COM004
5141719 2 55 Juan Ramirez DEM - Justice of the Peace, Pct 1 P2 JOP012

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5141719	2	61 Javier Montemayor, Jr	DEM - County Chairman
5141719	2	95 For	DEM - Referendum 1
5141719	2	97 For	DEM - Referendum 2
5141719	2	1 Barbara Ann Radnofsky	DEM - United States Senator
5141719	2	5 Chris Bell	DEM - Governor
5141719	2	10 Maria Luisa Alvarado	DEM - Lieutenant Governor
5141719	2	14 Mark Gilbert	DEM - Commissioner of Agriculture
5141719	2	20 Richard Raymond	DEM - State Representative, District 42 REP0042
5141719	2	30 Manuel R. Flores	DEM - District Judge, Judicial District
5141719	2	32 Carlos "C. Y." Benavides, III	DEM - County Judge
5141719	2	36 Alvaro "Ben" Morales	DEM - Judge, County Court at Law
5141719	2	39 Diana Navarro	DEM - Judge, County Court at Law 2
5141719	2	42 Marjorie Ramirez Ibarra	DEM - County Clerk
5141719	2	46 Delia Perales	DEM - County Treasurer
5141719	2	47 Consuelo "Chelo" Montalvo	DEM - County Commissioner, Precinct No. 4 COM0004
5141719	2	55 Juan Ramirez	DEM - Justice of the Peace, Pct 1 P2 JOF0102
5141719	2	95 For	DEM - Referendum 1
5141719	2	97 For	DEM - Referendum 2
5141719	2	1 Gene Kelly	DEM - United States Senator
5141719	2	4 Rick Holman	DEM - United States Representative, Dist 23 USREP23
5141719	2	5 Chris Bell	DEM - Governor
5141719	2	9 Adrian De Leon	DEM - Lieutenant Governor
5141719	2	11 David Van Os	DEM - Attorney General
5141719	2	12 Fred Head	DEM - Comptroller of Public Accounts
5141719	2	13 Valinda Hathcox	DEM - Commissioner of the General Land Office
5141719	2	15 Rosadee Milton, Jr.	DEM - Commissioner of Agriculture
5141719	2	16 Dale Henry	DEM - Railroad Commissioner
5141719	2	17 William E. "Bill" Moody	DEM - Justice, Supreme Court, Place 2
5141719	2	18 J. R. Molina	DEM - Presiding Judge, Court of Criminal Appeals
5141719	2	19 Rene Motes	DEM - Member, State Board of Education, District
5141719	2	21 Mercurio Martinez Jr.	DEM - State Representative, District 42 REP0042
5141719	2	25 Richard Garcia Jr	DEM - Appeals Court Justice Dist 4 P3
5141719	2	26 Dan Pozza	DEM - Appeals Court Justice Dist 4 P4
5141719	2	27 Laura A. Bustamante	DEM - Appeals Court Justice Dist 4 P5
5141719	2	28 Eddie De La Garza	DEM - Appeals Court Justice Dist 4 P7
5141719	2	29 Jon Lopez	DEM - District Judge, Judicial District
5141719	2	31 Raul Vasquez	DEM - District Judge, 11th Judicial District
5141719	2	33 Judith G. (Judy) Gutierrez	DEM - County Judge
5141719	2	37 Hugo D. Martinez	DEM - Judge, County Court at Law
5141719	2	39 Diana Navarro	DEM - Judge, County Court at Law 2
5141719	2	40 Manuel "Mama" Gutierrez	DEM - District Clerk
5141719	2	42 Marjorie Ramirez Ibarra	DEM - County Clerk
5141719	2	46 Delia Perales	DEM - County Treasurer
5141719	2	48 Jaime Cavales	DEM - County Commissioner, Precinct No. 4 COM0004
5141719	2	59 Oscar Rene Lirio	DEM - Justice of the Peace, Pct 1 P2 JOF0102
5141719	2	61 Javier Montemayor, Jr	DEM - County Chairman
5141719	2	95 For	DEM - Referendum 1
5141719	2	97 For	DEM - Referendum 2
5141719	2	21 Mercurio Martinez Jr.	DEM - State Representative, District 42 REP0042
5141719	2	29 Jon Lopez	DEM - District Judge, Judicial District
5141719	2	32 Carlos "C. Y." Benavides, III	DEM - County Judge
5141719	2	37 Hugo D. Martinez	DEM - Judge, County Court at Law
5141719	2	38 Jesus "Chuy" Garza	DEM - Judge, County Court at Law 2
5141719	2	42 Marjorie Ramirez Ibarra	DEM - County Clerk
5141719	2	45 Javier Martinez	DEM - County Treasurer

Tab 2

**IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION**

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
from the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

No: **06CA2973**

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, consisting of Governor Jeb
Bush, Chief Financial Officer Tom Gallagher, and State
Senator Daniel Webster; SARASOTA COUNTY
CANVASSING BOARD, consisting of Supervisor of
Elections Kathy Dent, Judge Phyllis Galen, and
Commissioner Paul Mercier; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; and VERN BUCHANAN,
as nominee of the Republican Party for Representative
in Congress from the State of Florida's Thirteenth
Congressional District,

FILED
CIRCUIT CIVIL DIV.
06 NOV 20 AM 11:16
CLERK CIRCUIT COURT
LEON COUNTY, FLORIDA

Defendants.

**PLAINTIFF'S REQUEST FOR PRODUCTION OF DOCUMENTS
AND FOR INSPECTION OF TANGIBLE THINGS**

Plaintiff, CHRISTINE JENNINGS, respectfully submits this Request for Production to the
Defendants, ELECTIONS CANVASSING COMMISSION OF THE STATE OF FLORIDA;
SARASOTA COUNTY CANVASSING BOARD; KATHY DENT, SARASOTA COUNTY
SUPERVISOR OF ELECTIONS; SUE M. COBB, SECRETARY OF STATE OF THE STATE OF

FLORIDA; and DAWN K. ROBERTS, DIRECTOR OF THE DIVISION OF ELECTIONS OF THE STATE OF FLORIDA, pursuant to Rule 1.350 of the Florida Rules of Civil Procedure.

DEFINITIONS

A. "Document" means any document in your custody, possession, or control, including, but not limited to, any printed, written, recorded, tapes, electronic, graphic or other tangible matter from whatever source, however produced or reproduced, whether in draft or otherwise, whether sent or received or neither, including the original, all amendments and addenda and any non-identical copy(ies) (whether different from the original because of notes made on or attached to such copy or otherwise) of any and all writings, correspondence, letters, telegrams, facsimiles, telex communications, cables, e-mail, notes, notations, papers, newsletters, memoranda, inter-office communications, releases, agreements, contracts, books, pamphlets, photographs, studies, minutes of meetings, recordings or other memorials of any type of personal or telephone conversations, meetings or conferences (including, but not limited to, telephone bills, and long distance charge slips), reports, analyses, evaluations, estimates, projections, forecasts, receipts, statements, accounts, books of account, diaries, calendars, desk pads, appointment books, stenographer's notebooks, transcripts, ledgers, registers, worksheets, journals, statistical records, cost sheets, summaries, lists, tabulations, digests, canceled or uncanceled checks or drafts, vouchers, charge slips, invoices, purchase orders, hotel charges, accountant's reports, financial statements, newspapers, periodical or magazine materials, any material underlying, supporting, or used in the preparation of any documents and all tangible things, of any and every kind whatsoever that could be considered a writing.

B. “Thing” means any thing in your custody, possession, or control, including, but not limited to, any voting system machine, voting system technology, voting system software, or voting system hardware.

C. “You,” “Your,” or “Defendants” shall mean the Defendants, as identified above, all of its subdivisions, agents, contractors, officers, directors, employees, attorneys, expert witnesses, accountants, auditors, subsidiaries, related agencies and companies and all other persons and/or entities over whom/which the Defendants has or has attempted to exercise control or authority, or which the Defendants or other persons or entities acting under its authority, control and/or direction, has hired, retained, and/or employed for any purpose relating to the issues in this case.

D. The words “pertain to” or “pertaining to” mean: relates to, refers to, references, revealing, reveals, reflects, regarding, contains, concerns, describes, embodies, mentions, constitutes, in connection, constituting, supports, corroborates, demonstrates, illustrates, proves, evidences, encompasses, shows, refutes, disputes, rebuts, controverts, or contradicts. Each of these words shall be interpreted to include the meaning of each other word or words.

E. Defendants shall mean ELECTIONS CANVASSING COMMISSION OF THE STATE OF FLORIDA; SARASOTA COUNTY CANVASSING BOARD; KATHY DENT, SARASOTA COUNTY SUPERVISOR OF ELECTIONS; SUE M. COBB, SECRETARY OF STATE OF THE STATE OF FLORIDA; and DAWN K. ROBERTS, DIRECTOR OF THE DIVISION OF ELECTIONS OF THE STATE OF FLORIDA.

F. As used herein, the past tense shall include the present tense, and vice versa. The singular includes the plural, and vice versa.

G. As used herein, the words "and" and "or" should be considered both conjunctive and disjunctive; the word "all" means "any and all."

INSTRUCTIONS

H. Any documents or things to which a claim of privilege is or will be asserted should be identified by author, signatory, description (e.g., letter, memorandum, telex, recording, etc.), title (if any), date, address (if any), general subject matter, present depository and present custodian and a complete statement of the ground for the claim of privilege should be set forth.

I. If it is maintained that any document or thing which is requested has been destroyed, set forth the contents of the document or thing, the date of such destruction, and the name(s) of the person(s) who participated in, authorized, or directed such destruction.

J. If any of the documents or things cannot be produced in full, produce to the extent possible, specifying the reason for the inability to produce the remainder.

K. This request is a continuing one. If after producing documents or allowing inspection of things, you become aware of, generate, or acquire any additional documents or things responsive to this request, you are required to produce those additional documents or things.

L. If any portion of any document or thing called for in this Request is considered privileged or is otherwise not produced, but the document or thing in its entirety is not privileged or otherwise subject to production, the Defendants must include the document or thing in their responses but may omit or delete any portions that are privileged so long as the document or thing clearly shows what

portions have been omitted or deleted and a summary or description of the subject matter of the omitted or deleted portions is provided. In addition, the Defendants must state the grounds upon which each portion of the document or thing is considered privileged, including the specific privilege, statute, or regulation relied upon.

REQUEST FOR PRODUCTION OF DOCUMENTS

1. All “event logs” (or “audit logs”) in digital form (on a recordable compact disc), as produced by the Unity software suite, covering every voter who voted or attempted to vote on an iVotronic voting machine used in early voting or in Election Day voting in Sarasota County in the November 2006 general election.

2. All “ballot-image logs” (or “ballot-image summaries”) in digital form (on a recordable compact disc), as produced by the Unity software suite, covering every voter who voted or attempted to vote on an iVotronic voting machine used in early voting or in Election Day voting in Sarasota County in the November 2006 general election.

3. All documents pertaining to a list of the machines, by serial number, that were used in each precinct and each early-voting station during the November 2006 general election.

4. All documents pertaining to the Electronics Systems & Software, Inc. (ES&S) source code to the iVotronic system as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a)

5. All documents pertaining to the ES&S source code to all elements of the Unity software suite as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a).

6. All documents pertaining to the ES&S source code to the personal electronic ballots (PEBs) as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a).

7. All documents pertaining to the development tools, scripts, “makefiles,” and other software as used in the November 2006 general election in Sarasota County to compile, debug, and test the iVotronic system, the PEBs, and the elements of the Unity software suite.

8. All user manuals, operator manuals, training materials, and other documentation related to the use, operation, or maintenance of any part of the iVotronic system, the Unity software suite or any of its elements, or the PEBs.

9. All documentation necessary to extract and read the “three redundant memories” contained within the iVotronic machines.

10. All documents pertaining to election-definition files and other necessary data (including passwords) to configure an iVotronic for each of the nine ballot styles used in Sarasota County in the November 2006 general election.

11. All digital copies of the ballot-style files for all nine ballot styles.

12. All files loaded onto an iVotronic machine as part of the “ballot programming” process, either for early voting or for Election Day voting.

REQUEST FOR INSPECTION OF TANGIBLE THINGS

13. Plaintiff hereby requests temporary access to eight iVotronic machines that generated particularly high undervote rates in the recent congressional election in Sarasota County, including at least one machine used on Election Day in each of six specified precincts (Precincts 31, 44, 74, 105,

117, and 118) and at least one high-undervote machine used in early voting; the carrying cases for those iVotronic machines, power adaptors, and other apparatus to set up the voting booths; two supervisor personalized electronic ballots ("PEBs"); nine regular PEBs (one configured for each ballot style used in Sarasota County in the recent election); a standard ES&S "Communications Pack" (containing a thermal printer and all the necessary cabling); and one PEB reader for transferring data from a PEB to a standard personal computer.

14. Plaintiff hereby requests permission to physically open and inspect the internal components of one iVotronic machine and one PEB.

15. Plaintiff hereby requests a full copy of all ES&S source code to the iVotronic system as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a); a full copy of all ES&S source code to all elements of the Unity software suite as used in the recent election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a); and a full copy of all ES&S source code to the PEBs as used in the recent election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a).

Respectfully submitted this 20th day of November, 2006 by:


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Respectfully submitted

Tab 3

**IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION**

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
from the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

No: *2006CA 2973*

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, consisting of Governor Jeb
Bush, Chief Financial Officer Tom Gallagher, and State
Senator Daniel Webster; SARASOTA COUNTY
CANVASSING BOARD, consisting of Supervisor of
Elections Kathy Dent, Judge Phyllis Galen, and
Commissioner Paul Mercier; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; and VERN BUCHANAN,
as nominee of the Republican Party for Representative
in Congress from the State of Florida's Thirteenth
Congressional District,

FILED
2006
SEP 14
CLERK OF COURT
LEON COUNTY, FLORIDA

Defendants.

PLAINTIFF'S MOTION TO COMPEL EXPEDITED DISCOVERY

1. Based on the extraordinary number of undervotes recorded by iVotronic
touchscreen voting systems in Sarasota County in the 2006 general election for Representative in
Congress from Florida's Thirteenth Congressional District, Plaintiff Christine Jennings has
initiated an election contest proceeding under Section 102.168, Florida Statutes. Plaintiff seeks
to demonstrate that pervasive malfunctioning of the iVotronics voting systems manufactured by
Electronics Systems & Software, Inc. caused at least 14,000 of the 18,382 undervotes reported in

the congressional race. In a race decided by just 369 votes, the number of undervotes is patently sufficient to cast doubt on the outcome of the election.

2. To determine the root cause of the pervasive malfunction of the iVotronics voting system and to assist the Court in establishing the reason for the extraordinary undervote in this race, Plaintiff must obtain expedited discovery of the items discussed herein, including logs generated by the iVotronic system, samples of the hardware on which the election was conducted, and the software used to operate that hardware. Therefore, Plaintiff hereby moves to compel, on an expedited basis, discovery required by Florida Rule of Civil Procedure 1.280. In view of the enormous public interests at stake, the pressing need for a prompt resolution of this matter, and the limited nature of the discovery requested in the accompanying Requests for Production, Plaintiff respectfully requests that this Court grant this motion by 12:00 noon on Tuesday, November 21, 2006, and that Defendants comply with the discovery sought herein by 5:00 p.m. on Wednesday, November 22, 2006, so that Plaintiff's experts can commence their analysis and testing immediately. *See Jacobs v. Seminole County Canvassing Bd.*, 2000 WL 1720698 (Fla. Cir. Ct. 2000) (granting an election-contest plaintiff's motion for expedited discovery); *cf.* Fla. Stat. § 102.168(6) (expediting the normal deadline for filing an answer in an election contest).

3. Plaintiff intends to establish that significant numbers of the undervotes are due to machine malfunctions in the iVotronic touchscreen voting systems and/or related equipment from the iVotronics' manufacturer, Election Systems and Software, Inc. ("ES&S"), including ES&S's Unity software suite. As explained in the expert affidavits attached to Plaintiff's Complaint To Contest Election, determining the causes of the irregularities requires analysis of certain documents in the Defendants' possession and examination of a select sample of iVotronic

machines and related equipment. *See* Declaration of MIT Political Science Professor Charles Stewart III on Excess Undervotes Cast in Sarasota County, Florida, for the 13th Congressional District Race [hereinafter “Stewart Decl.”]; Declaration of Rice University Computer Science Professor Dan S. Wallach [hereinafter “Wallach Decl.”].

4. Given the pace at which these proceedings must move forward, Plaintiff seeks the following discovery on an expedited basis:

- Logs: all “event logs” (or “audit logs”) and “ballot-image logs” (or “ballot-image summaries”) in digital form (on a recordable compact disc), as produced by the Unity software suite, covering every voter who voted or attempted to vote on an iVotronic voting machine used in early voting or in Election Day voting in Sarasota County in the recent election; and a list of the machines, by serial number, that were used in each precinct and each early-voting station;
- Machines: temporary access to eight iVotronic machines that generated particularly high undervote rates in the recent congressional election in Sarasota County, including at least one machine used on Election Day in each of six specified precincts (Precincts 31, 44, 74, 105, 117, and 118) and at least one high-undervote machine used in early voting; the carrying cases for those iVotronic machines, power adaptors, and other apparatus to set up the voting booths; two supervisor personalized electronic ballots (“PEBs”); nine regular PEBs (one configured for each ballot style used in Sarasota County in the recent election); a standard ES&S “Communications Pack” (containing a thermal printer and all the necessary cabling); one PEB reader for transferring data from a PEB to a standard personal computer; permission to physically open and inspect the internal components of one iVotronic machine and one PEB; any necessary tools and documentation to extract and read the “three redundant memories” contained within the iVotronic machines; election-definition files and other necessary data (including passwords) to configure an iVotronic for each of the nine ballot styles used in Sarasota County in the recent election; digital copies of the ballot-style files for all nine ballot styles; and every file that was loaded onto an iVotronic machine as part of the “ballot programming” process, either for early voting or for Election Day voting;
- Software: a full copy of all ES&S source code to the iVotronic system as used in the recent election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a); a full copy of all ES&S source code to all elements of the Unity software suite as used in the recent election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a); a full copy of all ES&S source code to the PEBs as used in the recent election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a); all necessary development tools, scripts,

“makefiles,” and other software as used in the recent election in Sarasota County to compile, debug, and test the iVotronic system, the PEBs, and the elements of the Unity software suite; and a copy of all user manuals, operator manuals, training materials, and other documentation related to the use, operation, or maintenance of any part of the iVotronic system, the Unity software suite or any of its elements, or the PEBs.

See generally Wallach Decl. at 6-16 (describing in detail how each of these items would be used to help conduct an exacting and thorough forensic investigation of the undervote); Stewart Decl. at 2 (statistically analyzing undervote rates in the 2006 elections and concluding that there is a “substantial possibility that the exaggerated undervote rates in Sarasota County were . . . caused by factors related to machine malfunction”).

THE PROPOSED DISCOVERY IS REQUIRED BY FLA. R. CIV. P. 1.280

5. Florida Rule of Civil Procedure 1.280 permits parties to “obtain discovery regarding any matter, not privileged, that is relevant to the subject matter of the pending action.” Fla. R. Civ. P. 1.280(b)(1). The requested discovery is critical both to Plaintiff’s ability to prove her case and to satisfying the public’s legitimate concerns of disenfranchisement currently encircling this election. The eight machines requested cover six precincts in which the abnormal undercounts were especially pronounced. Once the logs and those eight machines and their accompanying software are obtained, Plaintiff’s experts will use them to simulate and analyze Election Day events. Starting from the logs that track each vote cast, Plaintiff’s experts will script out, re-enact, and record on videotape a realistic reconstruction of Election Day events on the affected machines. With a few, controlled variations, Plaintiff’s experts can test different hypotheses offered to explain the thousands of undervotes and can begin to assess the likely contributions of these explanations. *See* Wallach Decl. at 12.

6. This videotaped “election reconstruction test” would be conducted by the same expert, following virtually the same protocol, as was used earlier this year in Palm Beach

County. That expert is Jocelyn Whitney of JBS Associates in Tucson, Arizona. The results of that Palm Beach County videotaped test showed that the machines (which were not manufactured by ES&S) had not malfunctioned; similar tests conducted elsewhere have demonstrated that certain voting machines have malfunctioned. *See, e.g.,* Wallach Decl. at 1, 11, 13, 15.

7. Plaintiff's experts' proposed simulation of Election Day events on the six machines will proceed in several steps. With the six selected machines programmed as they were on Election Day, right down to the time and date settings, the ballot-image logs and event logs will be used to create test scripts of the day's events. The scripts will include various "voter scenarios," in which voters will (a) change a specified vote selection while on the same screen; (b) change a specified vote selection after advancing one or more screens; (c) from the confirmation screen (sometimes referred to as the "review" or "summary" screen), return to a contest and change the vote selection and quickly scroll to the confirmation screen; (d) from the "cast ballot" screen (but before casting the ballot), return to a specified contest and change a vote selection; (e) from the confirmation screen, return to a specified contest and make no change, and slowly scroll to the confirmation screen; (f) from the confirmation screen, return to a specified contest and change the vote selection to "no selection made," or blank, quickly scroll to the confirmation screen, return to the specified contest, reselect a candidate, and slowly scroll to the confirmation screen; and (g) from the confirmation screen, return to a contest with "no selection made," make a selection, and then scroll to the confirmation screen. For the undervoted congressional race, the scripts shall provide for the selection of one of the two candidates, or no candidate, randomly. For all other offices and measures, the scripts will follow the actual behavior of real voters, based on the precise data contained in the ballot-image logs.

8. The scripts will then be executed by testers at assigned times, based on the actual event log's record of Election Day voting, on the designated machines during a mock Election Day. Testers will be instructed to confirm that their vote selections are consistent with the script and, if they are, cast their ballot so that a video camera can confirm their selections. An observer will also be present to check the vote selections for consistency with the test script. A director, present throughout the testing, will sign off on reports prepared by the observer whenever there is a discrepancy between a vote and the test script. The video camera will be focused on and will record activity on the iVotronic screen throughout the test.

9. Once the testing is complete, the data will be promptly analyzed. Printouts from each machine will be compared to the expected baseline tally figures to identify any inconsistencies between the actual results and the expected baseline tally figures. Discrepancy reports, test scripts, and the videotapes will be reviewed to analyze any inconsistencies and the effect they would have on the actual results.

10. Once the reconstructed Election Day is completed, and the votes tallied by the iVotronic have been reconciled with the votes expected to be tallied according to the test scripts and videotapes (taking into account the noted discrepancies), a test summary report or report of findings will be prepared.

11. The other major aspect of an exacting and thorough forensic investigation is to have voting-machine and software experts test samples of the hardware and examine the source code (or "program code") that operates the iVotronic voting system. Examining the source code is absolutely necessary to determine the cause of the voting-machine irregularities at issue in this case. *See* Wallach Decl. at 13-15. For example, a software "bug" or other malfunction could disrupt or prevent the transfer of certain votes from the machine's temporary memory to its

permanent memory, so that the voter might well see a vote cast for a particular candidate on his or her confirmation screen even though no permanent record of the vote will ever be recorded. *See id.* at 14. Finally, physical review of the machines and their internal memory devices will help determine whether the software or firmware in the machines has been modified in certain ways to introduce bias into the machines' cast-vote records.

**THERE IS NO BASIS FOR REFUSING OR DELAYING
THE PROPOSED DISCOVERY**

12. Prior to certification of the election, Plaintiff requested nearly identical information and items in proceedings in the circuit court for Sarasota County. During a hearing in that court on November 16, 2006, counsel for Defendant Vern Buchanan, the Republican nominee for the congressional seat, expressly acknowledged that, whether or not that discovery was permitted in the Sarasota County action, Plaintiff *is* entitled to this discovery in the election contest proceedings here. Specifically, Mr. Buchanan's counsel stated: "If this were a contest, what plaintiff's counsel is asking for would be appropriate If they want to bring a contest action Monday, we can then move into the formal discovery phase." Indeed, Mr. Buchanan's counsel expressly argued that the discovery was not appropriate in Sarasota County precisely *because* Plaintiff would be fully entitled to the information in this Court. Neither the counsel for the Secretary of State nor the counsel for the Sarasota County Supervisor of Elections expressed any disagreement with these statements. So there should be no objections to the proposed discovery from Buchanan or the Secretary or the Supervisor. Indeed, any such objections would be misplaced in any event, for four reasons.

13. *First*, Florida law gives Plaintiff a clear right to examine the machines and related software in the careful manner here. As with a request for "permission to enter upon land or

other property for inspection and other purposes,” Fla. R. Civ. P. 1.280(a), examination of computer equipment is appropriate so long as the examination is likely to retrieve relevant information and there are no less intrusive means of gathering it. *See Strasser v. Yalamanchi*, 669 So. 2d 1142, 1145 (Fla. 4th DCA 1996). The protocol proposed by Plaintiff’s experts is carefully crafted to obtain only information critical to this investigation. No aspect of the inquiry is more intrusive than necessary to resolve the critical issues before this Court.

14. *Second*, although the software may belong to a third-party vendor, there is no doubt that the Secretary of State is plainly able to produce it, and must produce it in response to a court order. Florida law requires that it be held in escrow by the Secretary of State. Fla. Stat. § 101.5607(1)(a). Any promises that the Secretary may have made to the vendor regarding the software’s confidentiality cannot justify withholding the software in response to a proper discovery request. *See Procter & Gamble Co. v. Swilley*, 462 So. 2d 1188, 1195-96 (Fla. 1st DCA 1985) (concluding that “the right to every man’s evidence” trumps party’s promise not to disclose researcher’s data). That is especially true given the fundamental rights and overarching public interests at stake here. *See, e.g., Burson v. Freeman*, 504 U.S. 191, 198 (1992) (calling the right to vote “a right at the heart of our democracy”); *Broward County v. Kerr*, 454 So. 2d 1068, 1070 (Fla. 4th DCA 1984) (“Discovery which is otherwise appropriate should not be refused solely because production of documents would hamper a party’s business operations.”). To the extent the materials constitute trade secrets, Plaintiff’s experts will enter a nondisclosure agreement prohibiting team members from divulging trade secrets or other proprietary information, and Plaintiff agrees to the imposition of an appropriate protective order, and further agrees to produce public and nonpublic versions of any findings as this Court deems appropriate.

15. *Third*, the ballot-image and event logs requested can be produced easily in the format Plaintiff has requested. The Unity software suite creates these logs, which track the votes cast (without identifying the voter) and the times at which the votes were recorded, as a matter of course, and the files can be transferred onto a CD with ease — literally in a matter of minutes. While they may contain a large number of records, producing them is not a burden. *See Coastal Physician Servs. of Broward County, Inc. v. Ortiz*, 720 So. 2d 324, 327 (Fla. 4th DCA 1998) (“Other than the number of potential recipients of the form bill, petitioner has made no showing that the disk or computer tape would require substantial effort to produce. In fact, we think that the information may be very easily retrieved from the computer.”). These logs are public records and cannot be withheld. (Indeed, they currently are the subject of a public-records request that Plaintiff has made to Defendant Dent, who has been busy with recount activity and has not yet produced them.)

16. *Fourth*, there is no other way to obtain this information. To determine what went wrong with certain machines in identified precincts in this election, there is no substitute for examining those particular machines and recreating the circumstances in which they were used. Although the Secretary of State has announced a state audit of what went wrong, it will not substitute for the discovery sought here. The state audit is a forward-looking inquiry designed to address long-term policy considerations about the efficacy of certain voting systems, rather than the key question here — whether faulty voting machines and systems rejected enough legal votes to change or place in doubt the result of the election. Fla. Stat. § 102.168. And more fundamentally, no state audit — overseen by the same actors who oversaw the certification of the allegedly defective voting machines — can have the independence necessary for adversarial judicial proceedings. To the contrary, barring the Plaintiff’s proposed audit because the

Department of State is conducting its own would be like forcing a malpractice plaintiff to rely on the defendant doctor's analysis of his own actions. *See Moore v. Schlesinger*, 150 F. Supp. 2d 1308, 1313 (M.D. Fla. 1991) (recognizing that discovery "within the adversarial arena" has the benefit of "the attendant safeguards of the judicial process"). There is thus no likelihood that the information sought here can be obtained through other means.

CONCLUSION

For the foregoing reasons, the Court should grant Plaintiff' Motion to Compel Expedited Discovery.

Respectfully submitted this 20th day of November, 2006 by:


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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing was transmitted via facsimile or e-mail, and overnight mail this 20th day of November, 2006, to:

Elections Canvassing Commission
Department of State
R. A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399-0250

Sue M. Cobb
Secretary of State of the State of Florida
Florida Department of State
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Tallahassee, FL 32399-0250

Sarasota County Canvassing Board
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Sarasota, FL 34236

Dawn K. Roberts
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Tab 4

IN THE CIRCUIT COURT OF THE
SECOND JUDICIAL CIRCUIT IN
AND FOR LEON COUNTY, FLORIDA.

CHRISTINE JENNINGS, nominee of
the Democratic Party for Representative
in Congress from the State of Florida's
Thirteenth Congressional District,

CASE NO. 2006 CA 2973

Plaintiff,

vs.

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher, and State Senator Daniel
Webster, et al.,

Defendants.

IN RE:

HEARING

BEFORE:

HONORABLE WILLIAM L. GARY
(Circuit Court Judge)

DATE:

Tuesday, November 21, 2006

TIME:

Commenced: 10:30 a.m.
Concluded: 11:15 a.m.

LOCATION:

Courtroom 2F
Leon County Courthouse
Tallahassee, Florida

REPORTED BY:

LIZ CLEARY, RPR
Notary Public in and for
State of Florida at Large

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7 -and-

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11 -and-

12 SAM HIRSCH, ESQUIRE
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14 Suite 1200 South
15 Washington, D.C. 20005

16 Representing the Defendant, Elections Commission,
17 Secretary of State, and Division of Elections Director
18 Dawn Roberts:

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22 Representing the Defendant, Vern Buchanan:

23 GLENN T. BURHANS, JR., ESQUIRE
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ALSO PRESENT:

REGGIE MITCHELL, ESQUIRE
(People for the American Way Foundation)

* * * * *

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* * * * *

ASSOCIATED COURT REPORTERS - (850) 222-5508

PROCEEDINGS

THE COURT: I believe we're here on Plaintiff's motion to compel expedited discovery; is that correct?

MR. HERRON: Yes, sir.

THE COURT: I did notice that we had three motions for admission to appear pro hac vice, one from Ms. Amunson, one from Mr. Hirsch, and one from Mr. Verrilli.

MR. HERRON: Yes, Your Honor.

THE COURT: I have no problems with that.

MR. HERRON: I've talked to the other side. They indicated they haven't seen them yet, but they've indicated there aren't any problems.

MR. ANTONACCI: No objections on Mr. Herron's representation.

THE COURT: I've read the motion and there is no problem.

MR. BURHANS: Your Honor, no objection from Mr. Buchanan.

MR. LABASKY: No objection from Defendant Dent, Your Honor.

THE COURT: If you will submit an order.

MR. HERRON: Do you want to get appearances first?

THE COURT: Sure.

MR. HERRON: Mark Herron on behalf Christine Jennings.

MR. COFFEY: Kendall Coffey for Christine Jennings.

ASSOCIATED COURT REPORTERS - (850) 222-5508

1 MR. HIRSCH: Sam Hirsch for Christine Jennings.
2 MR. ANTONACCI: Peter Antonacci for the Elections
3 Commission, the Secretary of State, and the Division of
4 Elections Director, Dawn Roberts.
5 MR. BURHANS: Glen Burhans, representing Vern
6 Buchanan.
7 MR. LABASKY: Ron Labasky representing Sarasota County
8 Supervisor of Elections, Kathy Dent.
9 MR. HERRON: Your Honor, we have the motion here and
10 Mr. Coffey is going to handle the particulars of the motion
11 because he's been involved in this case from the beginning
12 down in Sarasota County.
13 MR. COFFEY: Your Honor, may it please the Court.
14 First of all, our appreciation for allowing us to come
15 before you so quickly. We all know the case was filed just
16 yesterday, a large number of papers descended upon
17 Your Honor's chambers, and we're most grateful for that.
18 If Your Honor might indulge us, it would be my
19 intention to give a brief overview of why we're here, both
20 with respect to the case itself and with respect to the
21 motion that is before you. And then I will allocate a
22 portion of my time to Sam Hirsch, who can discuss with great
23 perspective some of the particulars of the request that we
24 have with respect to both hardware and software issues.
25 Your Honor, we're here because a remarkable thing

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1 occurred in District 13 in this past election. It was an
2 election that voters cared about very deeply. It was an
3 open Congressional seat. It was a midyear election where
4 you do not have a large number of voters who show up simply
5 to vote for the President. And it was viewed as a very
6 tight and very important race, not one where a long-term
7 incumbent with substantial advantages was going through in a
8 sense of formality.

9 It was something that was not only seen by the people
10 of District 13 as an election that could determine their
11 member of Congress for many years to come, but an election
12 that was viewed by many there and around the country as what
13 could be a battle for the 15th seat in Congress that could,
14 in effect, tip the axis of power from Republicans to
15 Democrats in the U.S. House of Representatives. People
16 cared very deeply about that election.

17 It was not only one of the most energetically
18 contested elections in the country, but it was one of the
19 most expensive Congressional elections in history, all
20 underscoring the remarkable degree of voter interest in this
21 election. Indeed, as our papers suggest through
22 testimonials and other eyewitness accounts, many people went
23 to the election just to vote in District 13.

24 From this extraordinarily important election a
25 remarkable thing happened on election night. Some 18,000

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1 votes were not counted, disappeared, described as
2 undervotes. And to just give Your Honor a brief sense of
3 what a stunning development that is in the context of this
4 case, in the Governor's race there were undervotes at a rate
5 of 1.3 percent. The Congressional race stood immediately
6 above the Governor's race, the Senate race a little bit more
7 than one percent of undervotes, and yet in the District 13
8 race in Sarasota the undervotes were at 13 percent. That is
9 an absolutely astonishing departure. But the comparisons go
10 on.

11 In the absentee ballots in Sarasota County the
12 so-called undervote rate was at about 2.5 percent, and yet,
13 Your Honor, in early voting the undervote rate was close to
14 18 percent, and on election day 14 percent. Again, another
15 staggering aberration. And it still goes on, because when
16 you look at the rest of the district it appeared to have
17 undervote patterns that were consistent with normal
18 experience in Congressional races, roughly 2.5 percent in
19 the other counties of the district. Again, an inexplicable
20 contrast with a 13 percent discrepancy of lost votes in
21 Sarasota.

22 We've been trying to get to the bottom of it. And one
23 of the nation's leading experts in undervotes is a Professor
24 Charles Stewart with MIT. His analysis, Your Honor, is that
25 this could not be explainable through fortuity or chance.

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1 In fact, he said that with respect to the election day
2 undervotes that the chance of something like that happening
3 purely through fortuity was one in five million. With
4 respect to the early voting undervotes, and, again, we note
5 that that percentage was close to 18 percent in District 13,
6 a very hotly contested race, Professor Stewart opined under
7 oath in his declaration that the chance of that happening to
8 fortuity, to chance circumstances, was one chance in
9 100 million.

10 He states, again expert testimony what is before
11 Your Honor for today's purposes, there is no doubt on page
12 ten that the use of the iVotronic machines caused the
13 extraordinarily high rate of undervotes in Sarasota County.
14 So we now come before you to determine what went so very
15 wrong and we come before you this morning to seek your help
16 in getting to the bottom of this very, very quickly.

17 We all know this is important. It is a Congressional
18 race. The people of District 13 care very deeply about who
19 their member of Congress is. That's why Chris Jennings is
20 here today, Your Honor, in court because she talks to people
21 every day who are baffled about a system that would throw
22 out so many votes. It is also a case of importance to this
23 entire nation. These questions about the reliability of
24 these computerized voting systems are asked not just here
25 but throughout the country by experts, by voters, by public

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1 interest groups. This is indeed potentially a test case for
2 the nation on verifying the reliability of electronic voting
3 systems.

4 Along with its great importance, it's equally clear
5 that this is a case that requires a very fast timetable.
6 It's important, of course, for the voters to know as quickly
7 as these processes can permit in an accurate and reliable
8 way who is indeed the elected member of Congress in their
9 district.

10 Statistically Professor Stewart makes it very clear.
11 Had normal patterns of undervotes been applied in the early
12 voting and on election day, Chris Jennings would have won.
13 He is very specific about it. Even using his most
14 conservative assumptions, the range of her net victory at
15 ordinary patterns of undervotes applied would have ranged
16 from 370 to 825 votes as her net margin of victory.
17 Obviously as the breakdowns continue and the analysis
18 continues, we think that that margin of victory is going to
19 be verifiably higher than that.

20 But this is a case where the will of the voters of
21 District 13 was defeated through machine error. That
22 urgency in the public getting to the truth about their
23 representative is something that is abundantly present here,
24 as it is in all election contests. And that is why the
25 courts treat these as special proceedings that pursue a

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1 tract of accelerated discovery and accelerated
2 determinations that is like no ordinary litigation.

3 And we've cited cases that underscore that, literally
4 cases that say you begin discovery within days of filing a
5 complaint in these kinds of cases because the public
6 interest demands no less.

7 We also want to speak to another fact, Your Honor,
8 that is very important in terms of the timing of this
9 matter. On January 3rd a new Congress will convene. On
10 that day there will be a Chair at which a member of Congress
11 to have been elected from District 13 would normally be
12 seated. We think it is extremely important for every reason
13 that is apparent to those of us who care about this
14 democracy that the necessary investigation be thoroughly
15 undertaken and that the important questions of this
16 controversy be answered by this court prior to January 3rd.

17 Our request is going to be described a bit more
18 specifically by Mr. Hirsch, but I want to emphasize a couple
19 of things. Even though in almost every way this is an
20 extraordinary case with extraordinary urgency and
21 extraordinary public interest, it has one commonality with
22 other cases, and that is parties are entitled to discovery
23 and the scope of discovery is broad.

24 I think it will be quickly apparent to Your Honor that
25 all of the items that we're seeking today are within the

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1 core of this matter. They are not exotic, farfetched
2 fishing expeditions. They are the most basic and essential
3 things you need to do a meaningful forensic audit of what we
4 contend is failed election machinery.

5 I think it's also apparent that in this process we are
6 asking, in effect, to put ourselves through a lot of work
7 very quickly. The basic elements of what would need to be
8 done either by the Secretary of State's office or the
9 Supervisor of Elections in Sarasota, are a matter of hours,
10 not days in terms of their effort. It is we who are
11 prepared and put to the task of working very, very hard
12 around the clock because we know that the demands of getting
13 to the truth are nothing less than that.

14 To begin, for example, with our request for access to
15 voting machines, machines that were actually used in the
16 election, we would emphasize that contrary to the concern
17 expressed in some of the papers filed by the State
18 Defendants we do not insist on taking the hardware out of
19 the Supervisor's facilities. We will go to the computers,
20 the machines, the PBB's where they are located under their
21 roof in order to undertake our testing.

22 We would also emphasize that the eight machines that
23 we are seeking to have tested can be assembled in a matter
24 of minutes or at most hours because they are right there.
25 Those machines and the other hardware are already

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1 effectively secured and are located in a fashion that would
2 allow us to get started very quickly, literally to get
3 started tomorrow if they were made available to us.

4 In addition to the hardware elements which Mr. Hirsch
5 is going to review for Your Honor in just a few moments,
6 there are components of software that in large part are in
7 the hands of the Secretary of State. These can be
8 duplicated and made available to both sides under very tough
9 confidentiality orders and very tough confidentiality
10 agreements to be signed by those experts with access and
11 subject to the stern enforcement powers of this Court. That
12 software can be available in a matter of minutes. Literally
13 with a few hours of work by the Supervisor's office and a
14 few hours of work by the Secretary of State we can begin
15 this forensic process that is so urgently needed.

16 There are certainly other things to be done, and as we
17 get to subjects such as depositions and things like that, of
18 course we would sit down and coordinate. There are aspects
19 of discovery which do lend themselves to that. But, Judge,
20 we need to find out what happened. That is going to be
21 testing the machines, the machines that were actually used
22 in this election. That is the kind of discovery that is
23 granted in courts of this state every day. If there is an
24 allegation about a defective Ford car, you test it. If
25 there is an allegation about a lot of defective Ford cars,

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1 you test a number of them.

2 Here, when we speak to eight machines, Your Honor,
3 it's eight out of 1,498. And I just want to emphasize that
4 if, in fact, the Secretary of State is preselecting some
5 number of the same eight that we'll be designating, we will
6 defer to their taking whatever four they want because we
7 certainly want to pursue our discovery as quickly as
8 possible and not in any way intrude upon the machines that
9 they seek access to.

10 Summarized, Your Honor, we have a case of momentous
11 importance and extreme urgency. We're prepared to do the
12 work that is needed. We're prepared to start with great
13 urgency and immediacy. We ask you to give us that
14 opportunity. Judge, I would like to ask Mr. Hirsch to step
15 forward just to review a few of the specific issues
16 concerning the materials we seek.

17 MR. HIRSCH: I want to take a few minutes to walk you
18 through the three main pieces of the discovery that we're
19 requesting. As you know from the motion itself and from the
20 proposed order, they fall into three categories. The first
21 was logs, the second was hardware or machines, and the third
22 was software. The first two being largely, we believe, in
23 the County's possession, the third largely in the State's.

24 As for logs we have good news. As we mentioned in the
25 motion, we had made a public records request from the

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1 county, Supervisor of Elections for what we called event
2 logs and ballot image logs, which tell us in great detail
3 what happened with each machine and each voter on election
4 day and also during the early voting period.

5 Yesterday afternoon after filing the papers, we
6 received a CD ROM that appears to contain what we requested.
7 Our experts are now going through that data and making sure
8 it's all there and all in good order. But as of right now
9 it appears that Item 3 on the list has been provided, and,
10 therefore, I believe there is no ongoing controversy as to
11 that. So I would like to spend the rest of my time
12 addressing the hardware and the software.

13 As Mr. Coffey pointed out, the hardware is basically
14 voting machines and some ancillary equipment that we believe
15 is stored in one hardware in Sarasota. And the software is
16 largely a source code, which is escrowed here in Tallahassee
17 with the State Division of Elections. The reason we need
18 both of these things is to run two different kinds of tests.
19 And they are not really overlapping, they are complimentary
20 tests that are the standard ways of testing electronic
21 voting machines whenever any kind of problem arises.

22 The first kind of test is an election reconstruction
23 test, sometimes known as a parallel test. Basically it's a
24 very carefully put together simulation of election day that
25 is captured on videotape and then allows the testers to see

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1 exactly where the problem arises, because all of the voting,
2 unlike on the real election day, is videotaped. Let me
3 explain a little more in detail.

4 We would ask that of the nearly 1,500 machines that
5 are in Sarasota County, and we believe that perhaps all,
6 certainly a very large number, well into the hundreds, have
7 this problem. And, again, we're analyzing the data right
8 now to figure out exactly how widespread it was. Out of the
9 1,500 machines we're asking for six to be set up in a
10 videotaped fashion within the warehouse in Sarasota and to
11 have a parallel test conducted by Joslyn Whitney.

12 Joslyn Whitney is the nation's foremost expert on
13 parallel testing, having recently conducted parallel tests
14 in Palm Beach County, as well as having conducted them in
15 many counties within California. There has only been, we
16 believe, I think four states that conducted extensive
17 parallel testing. One was done in-house, one was done by
18 the University of Maryland, and the other two were done by
19 Ms. Whitney and her firm.

20 What she does is she takes these logs that we received
21 yesterday and she creates from them extraordinarily
22 realistic scripts of how people actually voted. Although
23 these logs don't show us the names of the voters, they show
24 us precisely how they voted for each contest on the ballot
25 and they show us at what time each machine was voted on.

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1 So using that you can reconstruct actual keystrokes
2 where the person goes up to the machine and presses a series
3 of candidates or a series of propositions on ballot
4 initiatives and reconstruct exactly what the real voter was
5 doing on that machine on election day. And they mix in a
6 certain amount of variance where, for example, the voter may
7 skip over a race inadvertently, get to the summary sheet at
8 the end of the process and realize that he or she has
9 skipped over a race and go back and fill it in. There's go
10 back quickly, go back slowly, there's are all sorts of
11 variations that they can build into the scripts.

12 The testers themselves have to be a real fair
13 cross-section of what actual voters look like. Tall people,
14 short people, folks with long fingernails and short
15 fingernails, because this is a touch screen apparatus, folks
16 who are very computer savvy, folks who never deal with
17 computers, et cetera, but most importantly folks who aren't
18 looking for problems and don't know why this is being
19 tested. So we would bring our testers in from outside the
20 Sarasota area where this has gotten extensive media
21 coverage. And we wouldn't want to use people who are in the
22 election administration industry, obviously. We would want
23 to use a more realistic sampling of voters.

24 The whole process gets videotaped and at the end of
25 the 14-hour day voting on these machines we know precisely

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1 how many votes were cast for each candidate and use the
2 electronics to tell us what the actual tally is. And if the
3 two don't match, then we have prima facie evidence that the
4 machines were not properly recording legal votes that were
5 cast. That is the essence of what this parallel test is all
6 about.

7 Assuming the numbers don't match, as they apparently
8 didn't in the actual election, then we go back to the
9 videotape knowing exactly which votes were lost, because the
10 computer will tell us that, and try to figure out a pattern.
11 For example, when different companies, electronic machines
12 were crashing all over the country at phenomenal rates, by
13 doing one of these videotape tests in California, it was
14 discovered that people who very slightly dragged their
15 finger on the screen were causing the crashing on the
16 computers. That wasn't an undervote situation, that was
17 just crashing.

18 And the crash wouldn't take place immediately.
19 Sometimes it would take place at the end of that voter's
20 time at the booth, sometimes it would take place when the
21 next voter came to the booth. But it was only by examining
22 this videotape they figured out what was going on. And then
23 they went through the source code and they realized it was
24 badly programmed and caused somebody who dragged their
25 finger to crash the machines.

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1 Let me talk about the second type of test. As I just
2 indicated, sometimes the search for source codes is directed
3 by what we discover from the videotape parallel test. And
4 sometimes the source code examination itself is how you find
5 the problem initially. Here our expert is Dan Wallach, and
6 you have a declaration from him as you will see there. He's
7 one of the leading experts in the country on the software
8 component of electronic voting machines and he's a professor
9 of computer science at Rise University.

10 One of the things he would do with the software is to
11 run various debugging programs on it, and the other thing he
12 would do is to start reading through it. It's written in
13 computer programming language. I don't read or write any of
14 those languages myself, but someone of his experience and
15 knowledge can pore through the code line by line looking for
16 things, just like you and I could pore through a written
17 document and find ungrammatical, misspelled, or make no
18 sense in terms of a list of instructions. Because all a
19 program source code is is a list of instructions for the
20 computer.

21 None of this, I point out, requires in any way opening
22 up the machines, extracting anything, removing anything,
23 altering them, or making them unable to be used in future
24 elections, if it turns out that there are no problems in the
25 machines. We, however, think that the statistical evidence

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1 we have from Mr. Coffey is overwhelming that we will find
2 programming errors in the machines or hardware errors in the
3 machines, one or the other, or both, that caused this
4 historically aberrational undervote and will almost
5 certainly change the outcome of this very important
6 Congressional election.

7 The other thing I would like to point out is that the
8 recounts have now gone through two rounds, so there is no
9 reason to preserve the machines for further recounts. The
10 entire statutory scheme that deals with recounting has now
11 been executed and completed and those results were certified
12 yesterday. To the extent that the State's papers, which we
13 received right before walking in this morning, suggests that
14 the alteration of machines actually used on election day or
15 early voting would frustrate a recount, I think with all due
16 respect that doesn't really follow, because the recount is
17 finished and we know the results of that.

18 But a recount can't possibly catch the kind of
19 hardware or software errors that are now at the very core of
20 this case and the very core of our motion for expedited
21 discovery. As I said, we do not want to do anything to in
22 any way alter or destroy these machines. Based on what we
23 know now and the parts of the motion and proposed order that
24 talk about opening the machines and looking at the memory,
25 pulling any of the components out, we are perfectly happy to

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1 not have you order that today or tomorrow, or whenever you
2 rule on this motion, but to defer any such considerations
3 until we see whether these other less intrusive tests show
4 any evidence of problems that we believe exist. Thank you,
5 Your Honor.

6 THE COURT: Mr. Antonacci?

7 MR. ANTONACCI: Judge Gary, I'm here representing the
8 three state actors that have been named in this complaint.
9 And we filed this morning a response to the motion for
10 expedited discovery, as well as an affidavit of one of the
11 State's experts David Drury. Has the Court received those?
12 They were brought over in pretty quick order this morning.

13 THE COURT: I've received everything that has been
14 filed.

15 MR. ANTONACCI: I don't know if we have filed the
16 original yet.

17 THE COURT: I got it.

18 MR. ANTONACCI: We're here on the question about, it
19 seems to me, Your Honor, about whether or not there is an
20 emergency, as a matter of first instance.

21 The second question is not whether tests should be
22 conducted on these machines and the election systems that
23 are deployed in Sarasota County, the question is who
24 conducts those tests. Counsel has set forward with more
25 adjectives than I think I can remember: "This is an

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1 extraordinary case, it's a test case, it's fundamental to
2 the survival of democracy."

3 When the results of the election were made known
4 shortly after election day, the Secretary of State and the
5 Supervisor of Elections were not idle. And what you were
6 not told by counsel was that the Secretary of State, in
7 conjunction with the Supervisor of Elections, was prepared
8 to conduct these very same tests last Tuesday in Sarasota
9 County. And the Secretary of State, in conjunction with the
10 Supervisor, while the recounts were going on, a ripe time
11 for this to occur, was available in Sarasota County with a
12 team to do these very same tests that have been described by
13 counsel.

14 And we take no issue with the manner or the means of
15 the tests, because I think they are common to everybody in
16 the business. But instead of allowing the tests to go
17 forward by the only objective actor in this drama -- and by
18 objective, I mean there are two contestants in this race.
19 There is a Democrat and there is a Republican. And those
20 are the two individuals that have the direct and personal
21 interest in the outcome of the certification and the
22 decision of this Court and the decision of Congress down the
23 road.

24 The objective actors, the actors that don't have a
25 stake in who wins the case are the Supervisor and the

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1 Secretary. And the Supervisor and the Secretary attempted
2 to do these tests last week. And instead of allowing these
3 tests to go forward, what the Plaintiff did, not represented
4 by these counsel but represented by others, filed suit in
5 Sarasota County to enjoin the Supervisor and then
6 subsequently joined the Secretary of State to prevent these
7 tests from going forward. Because they did not want them
8 going forward under the observation and control of the
9 objective party, they wanted them under the control of the
10 party with interest in the case, only them.

11 In response to that emergency petition a complaint is
12 still not yet filed. The case, as far as I know, is still
13 pending. It may not be as of today, but as far as yesterday
14 the case was still pending. The Secretary of State and the
15 Supervisor said, okay, we'll slow down, we'll wait. We'll
16 wait and make sure that we do these tests upon consultation
17 with your experts and consultation with experts from the
18 Republican side and we'll get all of your suggestions, all
19 of your input, and then we will do the tests and you will be
20 the observers of those tests so that there will be
21 circumstantial guarantees of objectivity.

22 The case cranked along last week. Our expert
23 discussed at length with the Jennings experts about how to
24 conduct the parallel testing. And, frankly, there was very
25 little new that the experts on the Jennings camp added to

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1 what the Secretary of State was to do in the first instance.
2 And on Friday Judge Economou, who has the case in Sarasota
3 County, ordered Mr. Buchanan to come forward with his expert
4 by Monday.

5 Mr. Buchanan has now designated his expert. We are
6 now in the process of undertaking consultation with
7 Mr. Buchanan's expert so that there is access to both sides
8 to this objective analysis of these machines without the
9 control of the interested parties. That is what we think
10 should go forward as a matter of the Secretary of State's
11 obligation, contrary to what the Plaintiffs say, to find out
12 what happened. Is anything wrong? Is anything amiss?

13 No one would have suspected that 9/11 would have taken
14 place in the way that it took place, and the chances of it
15 taking place were remote, but it took place. We don't know
16 why this incident took place and what the causes are. If
17 the chances are a million to one that these undervotes were
18 the results of voter confusion, that's what the Secretary of
19 State wants to find out and the Secretary of State is
20 undertaking to find out. And we think that is the
21 appropriate way to go forward, not in the manner that the
22 Plaintiffs suggest.

23 Is there an emergency? There is no question but that
24 there is no emergency, as set forth in 102.68. 102.68
25 imagines or sets forth a contest of elections that is

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1 dramatically shorter in time period than the routine
2 litigation, but it is set up as routine litigation.

3 Routine litigation should go forward in the expedited
4 way that you would in a public records case or in a case
5 like that, but it should go forward rationally. It should
6 not go forward with everybody running around saying my hair
7 is on fire all at once. It should go forward in a fashion
8 that is controlled, that is fair, and that is objective. We
9 believe that placing these machines in the hands of the
10 gladiators in the arena is guaranteed to create an outcome
11 that is going to be unsatisfactory.

12 Counsel for the Plaintiff is right. These electronic
13 voting machines are the target of a great deal of public
14 controversy and we have a controversy right now that is
15 specific, as opposed to the general controversy, of whether
16 the machines are accurate or not or reliable or not.
17 Everything that is done with these machines from this moment
18 forward, Judge, should be as fair, open, transparent, and
19 objective as possible and it should not be done under the
20 control of one party or another. It should be under the
21 control of the objective elections supervisors, as is set
22 forth in the statute.

23 Our papers set out the reasons why we believe that
24 there is no emergency, and there is none. It also sets
25 forth the fact that this Court has no deadline to rule.

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1 Elections contests are controversial. Elections contests
2 often take time. Elections contests are very common in this
3 circuit, the circuit where multi-county elections contests
4 are filed, so our judges are very experienced in these kinds
5 of things. It's better to be correct and right than to be
6 fast. And what the Plaintiffs have suggested is that fast
7 trumps correct. In this case fast should never trump
8 correct, and once more, should not trump objective.

9 We have raised another issue in our papers that any
10 taking of possession of these machines, whether it's
11 temporary or not, whether it is under the roof of the
12 Supervisor of Elections in Sarasota County or not, should
13 never be allowed to take place. The possession of these
14 machines for the purposes of any testing should always be
15 under the strict control of public officials. This is after
16 all a great public event and private parties should never
17 have control of something as sensitive as an election
18 machine.

19 Judge, this is no different than if the Plaintiffs
20 came in here and said, Your Honor, give us all the absentee
21 ballots, just tender them to us, just hand them over to us
22 so that we can rifle through them. You would never allow
23 that. And that's exactly what these machines represent.
24 These machines represent real live ballots that currently
25 reside upon them as set forth in Mr. Drury's affidavit. And

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1 no one, except Ms. Dent and her employees or the Supervisor
2 of Elections, or the Secretary of State in conjunction with
3 Ms. Dent, should ever have custody or possession of these
4 machines.

5 The amount of suspicion, the amount of vitriol that is
6 out there in the public arena with respect to these machines
7 is simply too great to allow the risk of some private party
8 with an interest taking control of the machines.

9 Finally, with respect to the source code as set forth
10 in their motions, the Secretary of State maintains a copy of
11 the source code as provided in the statute. That source
12 code is owned by ES&S. Plainly this is a complicated case.
13 There is a mountain of affidavits that came with the
14 complaint that sets forth how complicated it is. The source
15 code is a complicated thing, it is a valuable thing. That
16 thing is owned by ES&S.

17 Plaintiff has had plenty of time to notify ES&S that
18 is demanding a copy of their proprietary material, their
19 valuable personal property. And the Legislature has set
20 forth in numerous places that material like this that is a
21 trade secret is confidential and exempt from the public
22 records act. So it would be our request that this Court
23 require ES&S to appear in this Court to be heard prior to
24 the Court requiring that their proprietary material be
25 tendered to people that, number one, have an interest in the

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1 outcome of an election, and, number two, experts that have
2 an interest in assaulting the current state of voting
3 systems in this country.

4 So we would ask you to deny the motion because there
5 is no emergency, instruct counsel to do what is done every
6 day in this state, which is to have counsel confer, because
7 there was no conference, there was no notice of this
8 lawsuit, to confer over a discovery plan and a discovery
9 mechanism and tender that to the Court for the purposes of
10 this case.

11 In the meantime, the Secretary of State has scheduled
12 these very tests to go forward next Tuesday under the
13 auspices of the Secretary of State. And we would ask you to
14 not interdict, as Judge Economou did, the ordinary
15 operations of the executive branch of government to
16 determine what it is that happened here. The who of doing
17 these tests is going to effect the believability, the
18 reliability, and the viability of the decision in the public
19 arena much more than the outcome.

20 I would ask that you recognize what counsel has said,
21 that this is an important case, and go forward only under
22 the auspices of public actors.

23 MR. LABASKY: Your Honor, again Ronald Labasky on
24 behalf of the Supervisor of Elections in Sarasota County and
25 Kathy Dent. I would initially add, Your Honor, we're here

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1 because we received a call concerning the hearing. As it
2 relates to Mr. Antonacci's comments concerning the emergency
3 nature and where we are potentially in this case, we have
4 not even been served with process. The Plaintiffs are here
5 asking you to enter an order before we have actually even
6 been formally served in the case and we view that as being
7 inappropriate.

8 Your Honor, I would concur with Mr. Antonacci
9 initially. The provisions of the election law allowing for
10 a contest of elections in 102.68 sets up a procedure, and
11 while Plaintiffs have argued that these cases move along at
12 light speed, that is not necessarily the need in each and
13 every case. And I would suggest that this is one of those
14 cases that a more conservative approach by the Court, since
15 the demands that the Plaintiffs are going to place on this
16 Court I think when all of this moves forward is going to be
17 rather extraordinary.

18 So as Mr. Antonacci stated, I believe that moving
19 along with a pace that is appropriate so the Court has a
20 clear understanding where it's being taken is absolutely
21 imperative. Because as counsel for the Plaintiff stated,
22 this is an election contest that is between two candidates,
23 and, frankly, that is the most important interest with
24 respect to this lawsuit, is those candidates who are going
25 to claim this office and in essence ask this Court to

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1 declare who the winner is.

2 The remaining point of that is the procedures in
3 Chapter 102 allow us ten days to respond. And I think the
4 Court should adhere to the procedures that are established
5 and concur with those time frames with respect to the
6 discovery that should be undertaken in this regard.

7 With the respect of the expedited request, Your Honor,
8 my client has just spent, as of Saturday afternoon, seven
9 straight days working 12 to 14 hours a day, including most
10 of her staff and all of the people that relate to the
11 requests that are going to be made in the Plaintiff's
12 request for production. Several of those people are on
13 vacation now, not only in light of the demands that were
14 placed on them last week, but because in two days it's
15 Thanksgiving holidays. So, Your Honor, I would suggest that
16 a more reasonable time frame for the production of these
17 items is appropriate.

18 Also, Your Honor, as referenced, my client along with
19 Mr. Buchanan, a Co-Defendant here, are Defendants in a case
20 in Sarasota County filed by the Plaintiff with respect to
21 particularly these items that are contained in the request
22 for production. So I'm now a Defendant in, or we are a
23 Defendant in two circuit courts with respect to these items.
24 And Judge Economou last Thursday reiterated his order for
25 basically a protective order saying don't release anything.

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1 So I think the Plaintiffs need to decide where they
2 want to litigate this matter initially and either go back to
3 Sarasota or dispose of that case so this Court is not
4 fighting a jurisdictional question of who has propriety,
5 this Court or Judge Economou down in Sarasota.

6 That stated, I believe we have, in reviewing the items
7 that are requested, a need for a reasonable period of time
8 to establish for ourselves what is proprietary, because we
9 do have an agreement with ES&S, which is the manufacturer of
10 this voting system, related to not releasing any of these
11 items subject to that agreement. So we not only need to
12 review what has been requested, but review our records to
13 determine what can be reasonably released and advise the
14 Court that if that's going to be ordered that there needs to
15 be procedures to protect those parties and those documents
16 that are proprietary to ES&S, who obviously, as
17 Mr. Antonacci stated, is not here.

18 Your Honor, the need for the expedited is clearly of
19 an interest to at least one of the candidates in this race,
20 but I would suggest that this Court moving in a matter of
21 days instead of allowing a reasonable time frame to have
22 this discovery undertaken and completed by perhaps the
23 middle of next week is not necessary.

24 There will be plenty of time for the candidates to
25 assess what they need to do and coordinate with the

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1 Secretary of State concerning any testing of this equipment
2 as necessary and as appropriate and in order to allow this
3 Court to receive an unbiased rather than a partisan
4 representation of what went on with these machines during
5 the election.

6 Finally, Your Honor, I think releasing the machines to
7 a third party is not only equivalent to releasing the
8 absentee ballots, but that is exactly what it is. The
9 election law provides that these machines and their results
10 are the ballots. I would reiterate, I think the Court going
11 forward with that request at this point before it knows
12 where it's going is equivalent to us being told give all the
13 ballots to the Plaintiffs so they can take a look at it and
14 decide where they want to go and advise me of what they
15 think occurred in this election while the nonpartisan,
16 noninterested parties sit on the sideline.

17 So, Your Honor, I would suggest there is no emergency
18 that necessitates an order being entered at this point and a
19 direct and immediate response basically to these requests
20 for productions and allow the parties to go through these
21 items and determine what they have, what they can release,
22 when they can produce those in a reasonable time frame, and
23 enter into whatever agreements are necessary to protect the
24 rights of the proprietary party ES&S. Thank you,
25 Your Honor.

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1 MR. BURHANS: Good morning, Your Honor,
2 Glenn Burhans representing Vern Buchanan. I will be brief
3 in my remarks. I will begin by saying that Mr. Buchanan
4 substantially agrees with the position stated by the
5 Secretary of State and the Supervisor of Elections.
6 I can assure you that no one wants a fast and final
7 resolution to this matter than the Congressman-elect. He
8 has, one, the majority of the votes, he has been certified
9 the winner, and come January 3rd he's entitled as a matter
10 of law to sit as a member of the House of Representatives
11 upon being sworn in on that date. The Congressman-elect is
12 prepared to cooperate with the Court and the parties in
13 seeing this through to a fast and final resolution.
14 That being said, this needs to go forward in an
15 orderly and expedited manner, which means we should be
16 thinking about a discovery schedule that is fair for all of
17 the parties and that allows all of the parties to take the
18 discovery that they need to take, and it can occur in an
19 expedited manner.
20 By reading the complaint we can see there are
21 references to hundreds of statements provided to
22 Ms. Jennings' lawyers. Certainly we should be allowed to
23 take the opportunity to take orderly discovery with respect
24 to those statements, and if necessary depose those people.
25 It would be nice if we had a set discovery schedule where

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1 Ms. Jennings' lawyers would identify those people and
2 provide us the opportunity to depose them, if necessary.

3 It seems we have a different expert in this case every
4 day we turn around. It would also be nice if we could have
5 experts identified in an orderly fashion so that they may be
6 deposed orderly and quickly. So, Your Honor, there is no
7 opposition by Mr. Buchanan to proceed on an expedited basis,
8 we just ask that it occur in an orderly fashion and not be
9 one-sided.

10 With respect to testing, Your Honor, I think counsel
11 has said it very appropriately. It needs to be fair,
12 impartial, accurate, and not biased to either side. Now,
13 the State has indicated it will begin testing next week.
14 The Congressman-elect respects that decision and has
15 accepted the opportunity to designate an expert and to
16 participate in that testing and observe it to make sure that
17 everything that needs to be tested is tested and is tested
18 appropriately.

19 Frankly, I was shocked to hear counsel say that there
20 was no reason to preserve the machines because the recount
21 is finished. Your Honor, this is a contested litigation and
22 those machines must absolutely be preserved and protected
23 because they contain the evidence that will support my
24 candidate's rightful claim to this office.

25 So we make strenuous objection to having the

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1 Plaintiffs run in there willy-nilly and conduct their type
2 of testing on these machines. The State has outlined its
3 procedures. They have experts in place. They have provided
4 the mechanism where both sides can participate fully and
5 have their interest represented. And that's the way we
6 should go about it. We should not be considering orderly
7 parallel testing when the protocols have not been fully
8 discussed and agreed upon by the parties. Thank you,
9 Your Honor.

10 MR. COFFEY: Your Honor, if I may respond briefly in
11 rebuttal. There are some things we agree on and I thought I
12 would start with that. Mr. Buchanan's lawyer said it should
13 not be one-sided and we couldn't agree more. Both sides,
14 both candidates should have the same immediate access to the
15 machines. Both sides are entitled to civil discovery. We
16 are in a civil lawsuit. This is not an administrative
17 proceeding to be decided by the Secretary of State.

18 In any civil proceeding, whether or not you have a
19 court-appointed examiner, a court-appointed psychologist,
20 another sort of third-party analyst reviewing it, the
21 parties still retain their own rights to their own
22 discovery, their own tests. And in this case that
23 necessarily means both candidates have to have the right of
24 access to test the machines.

25 Now we've heard about willy-nilly. Judge, we are not

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1 going to be running around taking them out of the
2 warehouses. I think it was suggested, I heard several
3 analogies to absentee ballots, that these guys want to take
4 all the absentee ballots home and let the dog chew on them.
5 To the contrary, Judge. Absentee ballots can be examined
6 and verified in the Supervisor's office, and that is
7 literally done within a day or two after the election.

8 That is in substance exactly what we're asking for
9 here. In the Supervisor's warehouse, with the Supervisor's
10 personnel present, with such safeguards as Your Honor thinks
11 is appropriate, permit us to proceed with the discovery that
12 is essential. If there is to be discovery at all in this
13 case that is truly meaningful, it has to center on the
14 machines. That means testing the machines, doing it for
15 ourselves.

16 If the Secretary of State can basically cut off a
17 party's right to discovery in a judicial proceeding simply
18 by appointing their view of an auditor, then I think the
19 implications of that are far reaching and certainly nowhere
20 authorized in the rules of procedure. They refer to
21 themselves as an objective actor, and we certainly hope that
22 to be the case.

23 But I want to point out one thing, Judge. There are
24 three different softwares that could be part of the problem.
25 Software with respect to so-called Unity, which is the

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1 generic headquarters based software, the software embedded
2 in the machines, the software in the cartridges that are
3 inserted into the machines on election day. Those are all
4 softwares that are certified and have been certified by the
5 Secretary of State.

6 So while we certainly assume that the Secretary of
7 State's efforts are well-intentioned, the reality is that
8 when public confidence is at issue, and, Judge, there is a
9 crisis of public confidence in the Sarasota community over
10 this, then having the only party that is to be allowed to do
11 testing be a party that arguably has an authorship in the
12 problem, the party that already certified and approved of
13 the software stuff that may have created this election
14 disaster, is not what public confidence demands and it's
15 certainly completely at odds with the rights in what is an
16 adversarial system. This is indeed, among other things, a
17 battle between two candidates and both candidates have to
18 have the right to test that equipment.

19 I want to respond to a couple of other points. Saying
20 that this is not an emergency ignores the reality of what
21 the nation expects to do on January 3rd. It also ignores --
22 and if we work backwards in terms of the time frame, in
23 terms of when we could have a substantive trial or hearing
24 on this matter, if you view December 11th or December 18th,
25 those periods, which I think would have to be the time frame

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1 as you are talking about to get some important judicial
2 questions answered in advance of when Congress convenes, we
3 are at light speed on this case, Judge.

4 And by the way, the statute, and Mr. Antonacci is
5 obviously very well-versed on these things, but it does
6 specify in Subsection 7 that any candidate is entitled to an
7 immediate hearing. So the statute itself -- the word
8 immediate doesn't appear in a lot of statutory or procedural
9 guidelines. When the Legislature says we're entitled to an
10 immediate hearing, they mean that we all should be here and
11 that the lawyers are going to have to work harder and the
12 people at the Supervisor's office should have to spend a few
13 hours tomorrow, and the same thing with the Secretary of
14 State, so we can move.

15 By the way, there was repeated references to ES&S, and
16 they are not here, and they have to work through all of
17 those things. We are troubled a bit that the Secretary of
18 State's office, which obviously has the software and has the
19 source code, is now saying you have to talk to ES&S about
20 it. But I also want you to know that this request for
21 access to the election machinery is not a new request. We
22 submitted it to the Office of the Supervisor of Elections in
23 Sarasota on November 8th, the day after the election.

24 So to suggest that they now need time to have
25 discussions and committee meetings about this stuff is

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1 certainly not reasonable. They have been on notice from
2 Day One as to what this election is about. There is no one
3 in District 13 that didn't know as of about 11:45 on
4 election night this was going to be all about computer
5 malfunction and answering a question of 18,000 lost votes.

6 Just a brief note on the Sarasota proceeding,
7 Your Honor, only to say this: That case is for all intents
8 and purposes superseded by this action. We know where we
9 are now. The Legislature of Florida said in multi-county
10 districts when you contest an election you are in
11 Tallahassee. This is the forum, this is the jurisdiction.
12 In fact, some of the arguments made by opposing counsel
13 while we were in Sarasota to see if we could get a head
14 start during the recount process was, hey, Judge, there is
15 going to be discovery in Tallahassee, that's where this case
16 belongs anyway.

17 Now that we're here, we're hearing about all the
18 reasons why this should be slowed down and all the reasons
19 why we should be running back and forth to Sarasota. Judge,
20 this is your case. This isn't anyone else's case. This is
21 your controversy. We're here to comply with your
22 directives, whether they be directives to those in
23 Tallahassee or to those in Sarasota. You are fully
24 empowered. You have the jurisdiction. This is a matter
25 that belongs in this forum.

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1 For all of the reasons that we have described, we
2 think the emergency couldn't be more apparent. As we've
3 also detailed, we have not a blunderbuss request for
4 discovery, not 100 depositions in five days, but specific
5 machines that are readily available in discernible portions
6 in the Supervisor of Elections' own warehouse, and software
7 that the Secretary of State could pull up if they wanted to
8 before lunchtime is over today.

9 For all these reasons, Your Honor, we ask that this be
10 indeed treated as an emergency, that the lawyers and the
11 parties in this case be challenged to do what they are
12 supposed to do in a matter of great public importance where
13 the litigants are entitled to an immediate hearing and where
14 the Congress of the United States would like to hear some
15 answers from Florida's judiciary prior to January 3rd.
16 Thank you, Judge.

17 MR. ANTONACCI: If I may make a few remarks,
18 Your Honor, for the record. With respect to the emergency,
19 certainly the Legislature knew when it set up the cause of
20 action what the various deadlines were. They know when
21 candidates take office. They know when elections are. And
22 this is our procedure. It's an expedited procedure, but it
23 is not a fire drill.

24 Let me disabuse counsel of this implication that he
25 has raised that the Secretary of State is suggesting that

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1 the parties not have an opportunity to test the machines.
2 Nothing could be further from the truth. This Court has
3 jurisdiction, the rules of procedure apply, testing is going
4 to go forward as ordered by the Court.

5 But what has happened in this case is that there is a
6 hustle being performed between Sarasota and Tallahassee.
7 They obstructed the proper testing of the machines last week
8 so they could present this question to you. And the
9 question is not whether the machines get tested, but who
10 tests them first. We urge you to allow the responsible
11 democratically accountable public officials to do that first
12 before the partisans get involved in making whatever
13 argument they are going to make.

14 Lastly, with respect to this public records request,
15 the Secretary of State, as far as I know, has not received a
16 public records request for the source code because the
17 source code is confidential and is exempt and counsel
18 certainly knows that. Whatever requests were made under 119
19 were directed to the Supervisor and don't involve source
20 codes. Thank you.

21 MR. MITCHELL: May it please the Court. My name is
22 Reggie Mitchell and I represent People for the American Way
23 Foundation and several other groups that are filing a
24 complaint today that is relevant to this case.

25 We certainly expect the cases to be consolidated. We

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1 too are asking for expedited proceedings in terms of
2 discovery. We represent one of the groups that is not
3 represented here today, and that is the voters of Sarasota
4 County. So that complaint will be filed this afternoon. We
5 have an interest in this case.

6 It's been suggested that the state actors are
7 objective. In our complaint we elucidate that nothing could
8 be further from the truth, that the Supervisor of Elections
9 in Sarasota County had an interest in protecting the
10 integrity or the perception of the integrity of the machines
11 that are in question and malfunctioned. And the Secretary
12 of State is the person that has certified these same
13 machines and has an interest as well.

14 So we're asking for expedited proceedings and the
15 Court to take notice that we will be involved in this case.

16 MR. ANTONACCI: Judge, Mr. Herron informs me that
17 there was a public records request served for the source
18 code. I apologize. They are confidential and exempt and we
19 will not be producing them absent a court order.

20 THE COURT: Anything else from anybody else? We are
21 here not for me to set schedules. We're here on a
22 Plaintiff's motion to expedite discovery. That's what we're
23 here for, right?

24 I'm going to deny your motion in part, probably in
25 large part. The machines are going to remain in the custody

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1 of the Supervisor of Elections. As far as any tests they
2 are going to conduct Tuesday, that is great, but I do want
3 the Supervisor to make available an opportunity for the
4 experts of either candidate, the Plaintiff or Mr. Buchanan,
5 to be there, observe. And I'm sure we will be addressing it
6 again, because whatever they do is going to be unacceptable
7 to somebody. But it may answer the question, too. I'm sure
8 hoping it will.

9 Your request for everything to take place by tomorrow
10 is totally out of order. I'm denying your motion to
11 expedite it, however I'm going to require the Defendants to
12 respond to discovery within 15 days.

13 As far as the source code, I'm denying your motion
14 without prejudice. I think ES&S needs an opportunity to be
15 heard. If they are heard, you may get that source code.
16 There is generally ways to get around the public becoming
17 aware what is in the source code. I'm aware of that, and
18 you all know it, too.

19 I think you ought to see if you can work something out
20 on the discovery, but I have a feeling within 15 days we're
21 going to have another hearing, just a wild guess. You do
22 respond to the complaint within ten days. I believe that is
23 the statute. And I believe 106 also rests venue here in
24 Leon County.

25 What have I missed?

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1 MR. COFFEY: Your Honor, you indicated that both -- I
2 want to be clear on one thing. You indicated that they are
3 going to respond in 15 days.

4 THE COURT: To the discovery request.

5 MR. COFFEY: And at that point the issue, for example,
6 if they object to making machines available, that will be
7 processed from there?

8 THE COURT: Absolutely. But I believe what they said
9 this morning was there is going to be tests conducted next
10 Tuesday and those machines will be made available to your
11 experts to observe the testing procedures. If it goes
12 beyond that, then I'm sure we're going to address it down
13 the road.

14 MR. COFFEY: But in terms of our own access to
15 conduct --

16 THE COURT: You have 15 days to respond.

17 MR. COFFEY: Okay. The other comment I had was with
18 respect to ES&S. Would it then be consistent with
19 Your Honor's wishes to schedule a hearing where they are
20 given notice so that we can address the source code issues?

21 THE COURT: I think they need to be given notice.
22 Actually, when my judicial assistant scheduled today's
23 hearing it was under the condition that everyone would not
24 only be noticed but served, and we only got halfway there.

25 MR. COFFEY: Some of the services may be accomplished

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1 this morning. Everybody got the papers at 1:00 yesterday.
2 ES&S is not a party to the lawsuit, so I assume that the
3 proper follow-up would be to contact your assistant, find a
4 time, and make sure ES&S gets plenty of notice.

5 THE COURT: Or you could serve them with a subpoena
6 duces tecum and see what they think, then we'll set a
7 hearing and have a hearing on that.

8 MR. COFFEY: Thank you, Your Honor.

9 THE COURT: You all have a good day.

10 MR. ANTONACCI: Thank you, Your Honor.

11 *(HEARING CONCLUDED AT 11:15 A.M.)*

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CERTIFICATE OF REPORTER

STATE OF FLORIDA:

COUNTY OF LEON:

I, ELIZABETH CLEARY, Registered Professional Reporter,
and Notary Public in and for the State of Florida at Large:

DO HEREBY CERTIFY that the foregoing hearing was taken
before me at the time and place therein designated; that my
shorthand notes were thereafter transcribed, via computer, under
my supervision, and the foregoing pages numbered 1, through 44
are a true and correct record of the aforesaid proceedings.

I FURTHER CERTIFY that I am not a relative, employee,
attorney, or counsel of any of the parties, nor relative or
employee of such attorney or counsel, or financially interested
in the foregoing action.

WITNESS MY HAND AND SEAL, this 22nd day of NOVEMBER,
2006, IN THE CITY OF TALLAHASSEE, COUNTY OF LEON, STATE
OF FLORIDA.

ELIZABETH CLEARY, RPR
P.O. Box 306
Tallahassee, Florida 32302
(850) 222-5508

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Tab 5

IN THE CIRCUIT COURT OF THE
SECOND JUDICIAL CIRCUIT, IN AND
FOR LEON COUNTY, FLORIDA.

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs

CASE NO. 2006-CA-2973

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher, and State Senator Daniel
Webster; SARASOTA COUNTY CANVASSING
BOARD, consisting of Supervisor of Elections
Kathy Dent, Judge Phyllis Galen, and
Commissioner Paul Mercier; KATHY DENT
as Sarasota County Supervisor of Elections;
SUE M. COBB as Secretary of State of the
State of Florida; DAWN K. ROBERTS as Director
of the Division of Elections of the State of Florida;
and VERN BUCHANAN, as nominee of the
Republican Party for Representative in Congress
from the State of Florida's Thirteenth Congressional
District,

Defendants.

ORDER ON MOTION TO COMPEL EXPEDITED DISCOVERY

This cause came on for hearing on the Motion To Compel Expedited Discovery filed
by Plaintiff, Christine Jennings, nominee of the Democratic Party for Representative in
Congress from the State of Florida's Thirteenth Congressional District. The Court having

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LEON COUNTY, FLORIDA

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considered said motion, argument of counsel, and being otherwise advised, it is


ORDERED AND ADJUDGED as follows:

1. The Defendants shall respond to Plaintiff's Request For Production of Documents and Inspection of Tangible Things within fifteen (15) days of the date of this order.

2. The tests to be conducted on Tuesday, November 28, 2006, on the voting machines by Defendants, Kathy Dent, as Sarasota County Supervisor of Elections, and Sue M. Cobb, as Secretary of State of the State of Florida, shall be conducted in such a fashion that allows the experts of the Plaintiff, Christine Jennings, and Defendant, Vern Buchanan, to observe said testing.

3. The request for production of the "source code" is denied without prejudice.

DONE AND ORDERED in Chambers at Tallahassee, Leon County, Florida, this 21st day of November, 2006.


WILLIAM L. GARY
Circuit Judge

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Tab 6

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

2006CA2996

ELLEN FEDDER, LANCE JONES,
ERNEST LASCHE a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, CHARLES CLIFTON,

Plaintiffs,

v.

TOM GALLAGHER, CHIEF
FINANCIAL OFFICER, STATE OF
FLORIDA, and GOVERNOR JEB
BUSH, and STATE SENATOR DAN
WEBSTER, as members of and as the
FLORIDA ELECTIONS CANVASSING
COMMISSION, and SUE M. COBB,
as SECRETARY OF STATE,
STATE OF FLORIDA,

and

THE SARASOTA COUNTY
CANVASSING BOARD,
SARASOTA COUNTY JUDGE
PHYLLIS GALEN, SARASOTA
COUNTY COMMISSIONER
PAUL MERCIER, and KATHY
DENT, SARASOTA COUNTY
SUPERVISOR OF ELECTIONS,
as members of and as THE
SARASOTA COUNTY
CANVASSING BOARD, and KATHY
DENT, as Supervisor of Elections,

and

VERN BUCHANAN, Nominee of
the Republican Party of Florida for
the 13th Congressional District of Florida,

Defendants.

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COMPLAINT TO CONTEST ELECTION

1. The right to vote is perhaps the most fundamental liberty enjoyed by citizens in a democratic society. The right to vote includes the fundamental right to have one's votes counted. Unfortunately, thousands of voters lost this most fundamental right in the 2006 general election for the Thirteenth District of Florida for the United States House of Representatives.

2. This is an action under Florida Statute Section 102.168(7) to contest the certification that Vern Buchanan was the winner of the November 7, 2006, congressional election in the 13th District in the State of Florida for the United States House of Representatives. The grounds for this contest are misconduct on the part of election officials (*Fla. Stat.* § 102.168(3)(a) (2006)), and rejection of a number of legal votes sufficient to change or place in doubt the result of the election (*Fla. Stat.* § 102.168(3)(c) (2006)). The vote totals reported in the Florida Election Canvassing Commission's certification of November 20, 2006 are inaccurate. They do not include legal votes cast in Sarasota County that were improperly rejected. The number of such votes is more than sufficient to place in doubt the result of the election.

3. Voters in Sarasota County, other than those voting via paper absentee ballots, were forced to use faulty and unreliable voting machines that only record votes electronically, making it very difficult, if not impossible, to determine if the machines failed to record or count legal votes and, if so, how many. By contrast, Sarasota County absentee ballot voters and voters in three other counties in the same congressional district voted on paper ballots that allowed election officials to ascertain the intent of the voters and made it possible to determine through a recount or audit if legal votes were recorded

and whether they were counted accurately. This unequal treatment offends principles of equal protection and one person, one vote that lie at the core of our democracy.

4. Plaintiffs Ellen Fedder, Lance Jones, Ernest “Mike” Lasche, Barbara Klein, Lois Harnes, John Minder, Dovie Murray, John McBride, Susan Gaar, Gary Lamer and Charles Clifton are electors who are qualified to vote in, and did, in fact, vote or attempt to vote in Sarasota County in the November 7, 2006, congressional election for the 13th District. Plaintiffs have standing under Section 102.168(1), Florida Statutes (2006).

5. Defendants Tom Gallagher, Jeb Bush and Dan Webster are and were at all relevant times members of the Florida Elections Canvassing Commission and thus necessary and proper parties to this action.

6. Defendant Sue M. Cobb is the Secretary of State for the State of Florida.

7. Defendants Phyllis Galen, Paul Mercier and Kathy Dent are and were at all relevant times members of the Sarasota County Canvassing Board. Defendant Kathy Dent is also the Supervisor of Elections for Sarasota County.

8. Defendant Vern Buchanan is certified as the successful candidate in the Thirteenth District race and thus an indispensable party to this action. These voter plaintiffs name Mr. Buchanan as a defendant only due to the statutory requirement in Section 102.168(4), Florida Statutes (2006).

9. The Sarasota County Canvassing Board certified 58,632 votes for Vern Buchanan and 65,487 votes for Christine Jennings. The Supervisor of Elections also reported that no vote was recorded for any congressional candidate on approximately 18,000 electronic ballots cast on ES&S iVotronic voting machines in early voting and

Election Day voting in the Sarasota County portion of the 13th Congressional District, nearly 15 percent of all electronic ballots and approximately 13 percent of all ballots, paper and electronic. By treating these ballots as “undervotes” in the 13th Congressional District election, the Sarasota County Canvassing Board rejected thousands of legal votes sufficient to place in doubt the result of the election.

10. The Florida Elections Canvassing Commission, based on the certified results submitted by the Canvassing Boards of Charlotte, DeSoto, Hardee, Manatee and Sarasota counties, certified 119,309 votes for Vern Buchanan and 118,940 votes for Christine Jennings, a difference of 369 votes, or 0.155 percent. That difference is dwarfed by the approximately 18,000 electronic ballots cast on ES&S iVotronic voting machines in early voting and Election Day voting in the Sarasota County portion of the 13th Congressional District on which no vote was recorded for any congressional candidate. By treating these ballots as “undervotes” in the 13th Congressional District election, the Florida Elections Canvassing Commission rejected thousands of legal votes sufficient to place in doubt the result of the election.

Jurisdiction and Venue

11. This is an action to contest an election under section 102.168, Florida Statutes (2006).

12. Section 102.1685, Florida Statutes (2006), establishes Leon County as the proper venue for this action.

Common Allegations

13. On October 13, 2005, the Office of the Secretary of State certified the ES&S iVotronic direct recording electronic (DRE) voting system for use in Florida elections. At that time, Glenda Hood was Secretary of State. Defendant Cobb is her appointed successor in the office.

14. In early voting and Election Day voting for the 2006 general election, Sarasota County voters cast their ballots on the certified ES&S iVotronic voting machines, in which selections in each race were made by touching the screen's display of the name of the voter's preferred candidate. The certified results indicated that approximately 18,000 of the ballots cast in this manner, the iVotronic machines did not record a vote for any candidate in the 13th Congressional District race. This translates to an "undervote" rate of approximately 14.8 percent in the 13th Congressional District race in ballots cast on the iVotronic machines, or roughly one in every seven voters. By contrast, the undervote rate in the race for United States Senate, which immediately preceded the congressional race on the touch screen ballots, was less than 1.2 percent, and the undervote rate in the gubernatorial race that immediately followed the congressional race on the same screen was less than 1.4 percent. In fact, more people voted for Hospital Board in Sarasota County than for the United States House of Representatives.

15. Certain Sarasota County precincts had particularly high congressional undervote rates. For example, precincts 90, 105 and 118 had undervote rates in excess of 25%, or one in four voters. The congressional undervote rate in Precinct 153 was 38%, meaning that no vote was recorded for more than one in every three voters who cast votes in the U.S. Senate and Governor's races that appeared on the ballot immediately before

and after the congressional race. Overall in Precinct 153, 24 undervotes were reported (i.e., votes for the congressional race were not recorded on 24 ballots), 34 votes were recorded for the Democratic candidate Christine Jennings and 5 votes were recorded for the Republican candidate Vern Buchanan.

16. By contrast, absentee voters in Sarasota County cast their votes by hand, inking in the gap in an arrow symbol for each of their selections on paper ballots designed to be counted by scanning machines. These Sarasota paper ballot voters had an undervote rate of 2.5 percent in the 13th Congressional District race.

17. Nearly all voters in three of the four other counties in the 13th Congressional District, DeSoto, Hardee and Manatee, cast their votes in the 2006 general election on optical scan paper ballots. The undervote rate in the 13th Congressional District race in DeSoto County was less than 2.2 percent. In Hardee and Manatee counties, the undervote was less than 1 percent. In the small portion of Charlotte County that lies within the 13th Congressional District, the undervote rate on the iVotronic machines used in early and Election Day voting was 2.51 percent.

18. During early voting, which ran from the 15th day before the November 7, 2006 election through the 2nd day before the election (i.e., October 23, 2006, through November 5, 2006), numerous Sarasota County voters such as Ernest “Mike” Lasche complained orally to poll workers at early voting sites, and in writing to the Sarasota County Supervisor of Elections office, of difficulties in casting their vote in the 13th Congressional District race on the iVotronic touch screen machines.

19. Many voters, such as Plaintiffs Ellen Fedder, Lance Jones, Barbara Klein, Dovie Murray and Lois Harnes reported that the congressional race was easy to miss

because of its placement at the top of the second screen of choices, above a colored header introducing the state office races that followed, beginning with governor, and that the ballot layout and design were thus unclear and confusing. Some reported being certain nonetheless that they entered a vote in the congressional race when it first appeared on the second screen of the ballot, only to find when they reached the summary screen at the end of the ballot that no CD 13 candidate's name appeared and no "x" was shown in the box next to the title of the office. Some reported that they were able to return to the selection screen and enter a vote, but had doubts as to whether the machine had actually recorded that vote, since the machine had missed it the first time.

20. Other voters, such as Plaintiffs John McBride and Ernest "Mike" Lasche reported seeing the congressional race and the names of the candidates for the first time only when they reached the summary screen, with the screen indicating by a text message and an arrow that they had not entered a selection in the race. Still others reported requiring multiple attempts before a vote would register for their candidate in the race, but had doubts as to whether the machine actually recorded that vote.

21. Despite the complaints during early voting, Defendant Dent did little or nothing to rectify the situation. To the contrary, she accused some complainants, such as Plaintiff Ellen Fedder in writing of having a political agenda to undermine confidence in electronic voting machines and attempting to disrupt the election process. In a November 2, 2006, e-mail response to several complainants, including Plaintiff Ellen Fedder and Ernest "Mike" Lasche who had offered detailed descriptions of the voting machine irregularities they had encountered in early voting, Supervisor Dent was dismissive of the reports. Her concluding words were: "With Election Day almost upon us, I hope we can

stop looking for ways to disrupt the process and disenfranchise voters. I invite you all to work with us to ensure a smooth election process. This office has always been and will continue to be responsive to valid concerns and even criticism. The political strategy of attacking the process has become so vicious that it is destroying the very process that makes it possible to have confidence in the electoral process.”

22. In particular, among her other failures to act, Defendant Dent failed even to seek to change the ballot layout with respect to the congressional race, failed to post signs or other warning notices to voters concerning the problem, and failed to provide timely and sufficient instructions to pollworkers about the problem.

23. On Election Day, November 7, 2006, starting soon after voting commenced at 7:00 a.m. and continuing throughout the day, voters from dozens of precincts throughout Sarasota County had similar problems voting, and some lodged similar complaints, orally and in writing, with poll workers and with the office of the County Supervisor of Elections. By their own accounts and the accounts of poll workers, they described the same problems early voters had complained of while voting or after attempting to vote in the 13th Congressional District race on the iVotronic voting machines.

24. Plaintiffs Ellen Fedder, John Mindler, Lois Harnes, Dovie Murray and Barbara Klein also saw their CD 13 votes register on the original selection screen. When they reached the summary screen, the box for the congressional race contained no “x” but, unlike Plaintiff Jones’ experience, no text alert appeared. Ellen Fedder and John Mindler were able to return to the selection screen and enter a vote that was shown on the summary screen when they returned there. Lois Harnes, John McBride and Dovie

Murray entered their votes directly from the summary screen without returning to the selection screen, something the iVotronic should not permit if operating properly.

Barbara Klein had a particularly difficult experience. She scrolled back page-by-page to the selection screen for CD 13, made her selection and saw the vote register an "x." She returned to the summary screen, only to find again no text warning and a box with no "x." Scrolling back to the selection screen a second time, she tried three times to press her candidate's name before the screen registered a vote, a vote which was finally also displayed on the review screen. All of these plaintiffs are concerned as to whether the machine actually recorded and counted their vote.

25. Other Election Day voters, like Plaintiff John McBride, did not see the congressional race until they reached the review screen but were able, like Plaintiffs Lois Harnes and Dovie Murray, to enter a vote in the race directly from the summary screen, something that should not have been possible if the iVotronic worked as designed. Each is uncertain as to whether the vote was recorded and counted accurately.

26. Plaintiffs Lance Jones and Ernest "Mike" Lasche saw the congressional race when it first appeared on the second screen on the ballot. Each entered a vote for his preferred candidate. When they reached the summary screen, however, the box for the congressional race contained no "x" mark and a text message advised that no selection had been made. Both returned to the selection screen, re-registered the vote, and finally saw it reflected on the summary screen. Each is uncertain as to whether the machine actually recorded and counted his vote.

27. Election Day voters, such as Plaintiffs Lance Jones and Barbara Klein, and poll workers, such as Plaintiff Susan Gaar, also reported that Sarasota County iVotronic

machines displayed unexpected, irregular screens after some voters completed casting their ballots, pushed the final “vote” button, and the machine displayed its standard “Thank you for voting” message. The irregular screens indicated that the voter had not finished voting. Plaintiff Susan Gaar, a poll inspector, saw the irregular message “continue” on an otherwise blank iVotronic screen after plaintiff Gary Lamer had voted on the machine, and called him back. In some cases, poll workers instructed the voter to push the final “vote” button again, after which no “Thank you for voting” message appeared, leaving the voter, such as Plaintiff Lamer, uncertain as to whether he or she had in fact cast one ballot, two, or none.

28. In Florida counties that do not lie within the 13th Congressional District, ES&S iVotronic voting machines also produced extraordinarily high undervote rates. Sumter and Lee counties had undervote rates of 21 percent and 22 percent in the state Attorney General’s race, which, unlike the 13th Congressional District race in Sarasota County, was not displayed at the top of an iVotronic screen. Charlotte County, only a small part of which lies within the 13th Congressional District, reported an undervote rate in the Attorney General’s race of 18 percent.

29. In addition to high undervote rates, iVotronics in Sarasota County Precinct 22 did not provide “zero tapes” prior to the commencement of voting on Election Day, a step required as an indication that the machine does not contain any votes prior to the official start of voting. Also on Election Day in Precinct 22, the internal clock in at least one iVotronic machine was set for a date other than November 7, 2006.

Count I, Section 102.168(3)(a) (Sarasota

County Supervisor of Elections Kathy Dent)

30. Plaintiffs reallege paragraphs 1 through 29.

31. Supervisor of Elections Kathy Dent has a duty under Section 102.141(8)(a)(1) to identify and report all voting system equipment or software malfunctions at the precinct level, and the steps taken to address the malfunctions.

32. Supervisor of Elections Dent has a duty under Section 102.141(8)(a)(2) to identify and report all election definition errors that were discovered after the logic and accuracy test, and the steps taken to address the errors.

33. During the early voting period, Defendant Kathy Dent personally received multiple complaints from voters and poll workers concerning voter difficulty in registering their vote on iVotronic machines in the 13th Congressional District election, as described at length above. Similar complaints were made to employees of the Supervisor of Elections and to poll workers sworn in to run the early voting sites. These complaints pointed to equipment or software malfunctions, "election definition" (i.e., ballot layout and design) errors, or a combination thereof.

34. On information and belief, Defendant Dent took no or insufficient steps to investigate or to identify and report equipment malfunctions, software malfunctions or election definition errors in the iVotronic touch screen voting machines that led to the complaints. Instead, Defendant Dent and many of her employees were dismissive and condescending toward voters and poll workers who lodged the complaints. Defendant Dent went so far as to suggest in a television interview the night before the election that the proponents of a county charter referendum to require voter verifiable paper ballots were falsely generating the complaints concerning the iVotronics to bolster the likelihood of the referendum's passage. She also accused some complainants in writing of having a

political agenda to undermine confidence in electronic voting machines and attempting to disrupt the election process.

35. Ten days after the election, Defendant Dent, notwithstanding her duties under Sections 102.141(8)(a)(1) and 102.141(8)(a)(2), publicly stated that she planned to answer “no” to questions on a state-mandated form reporting whether voting equipment malfunctioned or affected the outcome of the race.

36. Through misconduct, incompetence, gross negligence, lack of care or an erroneous understanding of the statutory requirements, Defendant Dent failed to investigate and to identify and correct the equipment malfunctions, software malfunctions or ballot layout errors responsible for the faulty operation of the iVotronic voting machines. As a result, she failed to substantially comply with her statutory duty under Section 102.141(8)(a)(1) & (2). On information and belief, equipment malfunctions, software malfunctions or ballot layout errors or a combination thereof in the iVotronic voting machines caused the county result in the 13th Congressional District election certified by Defendant Sarasota County Canvassing Board to include false, grossly excessive undervote figures and the rejection of thousands of legal votes. Thousands of voters were disenfranchised in the congressional election as a result. A reasonable doubt exists as to whether the certified election result expresses the will of the voters, and the Court must void the election.

Count II, Section 102.168(3)(a) (Secretary of State Sue M. Cobb)

37. Plaintiffs reallege paragraphs 1 through 36.

38. Defendant Sue M. Cobb is the Secretary of State for the State of Florida.

39. Section 101.5606, Florida Statutes (2006), provides that no electronic voting system shall be approved by the Department of State unless it is so constructed that, *inter alia*, it permits each elector to vote at any election for all persons and offices for whom and for which the elector is lawfully entitled to vote (*id.*, §101.5606(2)), it is capable of correctly counting votes (*id.*, §101.5606(5)), and, for machines that register votes electronically, it will permit each voter to change his or her vote for any candidate appearing on the official ballot up to the time that the voter takes the final step to register his or her vote and to have the vote computed (*id.*, §101.5606(12)).

40. On October 13, 2005, Defendant Cobb's predecessor in the Office of Secretary of State certified the ES&S iVotronic voting machine, firmware, software and election management software for use in Florida elections.

41. When the Secretary of State certified the iVotronic, it was widely known among Florida elections officials that key components of ES&S voting systems suffered from serious defects and had experienced serious failures in multiple elections in multiple jurisdictions. By way of example, an eGovernment specialist for Miami-Dade County, Florida, discovered and then reported in June 2003, that defects in ES&S Events Log Reports and Vote Image Reports meant that they could not be used to recount, audit or certify election results. ES&S systems in other states were known to have lost votes and attributed votes to the wrong candidates.

42. Disregarding these warnings concerning the reliability and trustworthiness of ES&S voting systems, the former Secretary of State certified the iVotronic, thereby substantially failing to comply with the statutory requirements for electronic voting system certification in section *Fla. Stat.* § 101.5606 due to a lack of care or an erroneous

understanding of the statutory requirements. On information and belief, this substantial noncompliance left uncorrected a defect or defects in the hardware, firmware and/or software of the iVotronic voting machines that caused the certified results of the 13th Congressional District election to include false, grossly excessive undervote figures, resulting in the rejection of thousands of legal votes. As a result, thousands of voters were disenfranchised in the congressional election, far more than enough to cast doubt upon the result of the election. A reasonable doubt exists as to whether the certified election result expresses the will of the voters, and the Court must void the election. *Fla. Stat.* 102.168(3)(a) and (c); *Beckstrom v. Volusia County Canvassing Board*, 707 So.2d 720 (1998).

Count III, Section 102.168(3)(c) (Sarasota County Canvassing Board)

43. Plaintiffs reallege paragraphs 1-42.

44. Defendants, Phyllis Galen, Paul Mercier and Kathy Dent are and were at all relevant times members of the Sarasota County Canvassing Board.

45. On information and belief, equipment malfunctions, software malfunctions, ballot layout errors or a combination thereof in the iVotronic voting machines caused the county result for the 13th Congressional District election certified by Defendant Sarasota County Canvassing Board on November 18, 2006, to include false, grossly excessive undervote figures and the rejection of thousands of legal votes. Thousands of voters were disenfranchised in the congressional election as a result. A reasonable doubt exists as to whether the certified election result expresses the will of the voters, and the Court must void the election.

Count IV, Section 102.168(3)(c) (Florida Elections Canvassing Commission)

46. Plaintiffs reallege paragraph 1 through 45.

47. On November 20, 2006, the Elections Canvassing Commission issued a written certificate of the result of the 13th Congressional District election.

48. On information and belief, a defect or defects in the hardware, firmware and/or software of the iVotronic voting machines caused the certified results of the 13th Congressional District election to include false, grossly excessive undervote figures and the rejection of thousands of legal votes. As a result, thousands of voters were disenfranchised in the congressional election. A reasonable doubt exists as to whether the certified election result expresses the will of the voters, and the Court must void the election.

Prayer for Relief

WHEREFORE, Plaintiffs pray that the court hear this matter on an expedited basis pursuant to Florida Statute Section 102.168(7), and that:

As to All Counts:

A. Order that the 13th Congressional District election results certified by the Sarasota County Canvassing Board and the Florida Elections Canvassing Commission are void.

B. Order Defendant Kathy Dent, in her capacity as Sarasota County Supervisor of Elections, to conduct as soon as practicable a new election for the Thirteenth Congressional District of Florida in which only those official candidates appear on the ballot who appeared on the ballot at the 2006 general election for the Thirteenth Congressional District; in which only those eligible Sarasota County electors who voted on iVotronics are permitted to vote; and in which only paper ballots are used

except to the extent necessary to accommodate voters for whom paper ballots present an accessibility problem.

C. Order Defendant Dent to include in the canvass of the new 13th Congressional District election the votes cast in the new election and the absentee ballot votes cast and previously canvassed in the original election.

D. Order Defendant Sarasota County Canvassing Board, following the canvass of the votes cast in the new 13th Congressional District election, to certify the results.

E. Order Defendant Florida Elections Canvassing Commission, upon receipt from the Sarasota County Canvassing Board of its certified result from the new 13th Congressional District election, to combine those results with the official canvass results submitted by the other counties in the 13th Congressional District following the general election and certify the overall result.

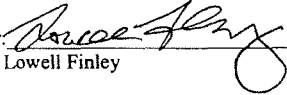
F. IN THE ALTERNATIVE, Plaintiffs pray that the Court grant the relief prayed for in paragraphs A through E above, except that the Court also order the Supervisors of Elections of Charlotte, DeSoto, Hardee and Manatee counties to conduct a new election and canvass consistent with paragraphs B and C above, order the County Canvassing Boards of Charlotte, DeSoto, Hardee and Manatee counties to certify the result of the new election consistent with paragraph D above, and order the Florida . Elections Canvassing Board to certify the overall result consistent with paragraph E above.

G. Grant such other relief as the Court deems right and just.

Respectfully submitted this 21st day of November, 2006.

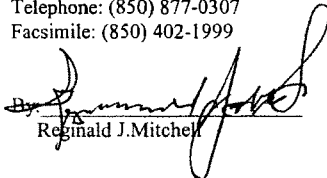
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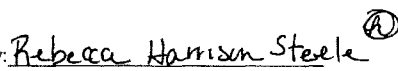
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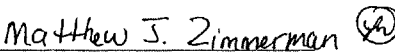
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Tab 7

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P.2

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

ELLEN FEDDER, LANCE JONES,
ERNEST LASCHE a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, CHARLES CLIFTON,

Plaintiffs,

v.

TOM GALLAGHER, CHIEF
FINANCIAL OFFICER, STATE OF
FLORIDA, and GOVERNOR JEB
BUSH, and STATE SENATOR DAN
WEBSTER, as members of and as the
FLORIDA ELECTIONS CANVASSING
COMMISSION, and SUE M. COBB,
as SECRETARY OF STATE,
STATE OF FLORIDA,

and

THE SARASOTA COUNTY
CANVASSING BOARD,
SARASOTA COUNTY JUDGE
PHYLLIS GALEN, SARASOTA
COUNTY COMMISSIONER
PAUL MERCIER, and KATHY
DENT, SARASOTA COUNTY
SUPERVISOR OF ELECTIONS,
as members of and as THE
SARASOTA COUNTY
CANVASSING BOARD, and KATHY
DENT, as Supervisor of Elections,

and

VERN BUCHANAN, Nominee of
the Republican Party of Florida for
the 13th Congressional District of Florida,

Defendants.

FILED
11/22/06
Bob Inzer
Clerk, Circuit Court
Leon County, FL

No. 06 CA 2996

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LEON COUNTY, FLORIDA

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IN

PLAINTIFFS' MOTION TO CONSOLIDATE

Plaintiffs Elica Fedder, Lance Jones, Ernest Lasche a/k/a Mike Lasche, Barbara Klein, Lois Harnes, John Minder, Dovie Murray, John McBride, Susan Gaar, Gary Lemer, and Charles Clifton (hereinafter "Plaintiffs") hereby request consolidation of this case with *Jennings v. Election Canvassing Commission of the State of Florida, et al.*, (hereinafter *Jennings*), Leon County Circuit Court Case No. 2006-CA-2973, and to provide formal notice to all interested parties of same. As grounds for their motion, Plaintiffs state the following:

1. Consolidation is appropriate pursuant to Florida Rule of Civil Procedure 1.270, which states:

(a) Consolidation. When actions involving a common question of law or fact are pending before the court, it may order a joint hearing or trial of any or all the matters in issue in the actions; it may order all the actions consolidated; and it may make such orders concerning proceedings therein as may tend to avoid unnecessary costs or delay.

Id. All of the grounds for consolidation mentioned in Rule 1.270(a) amply exist here.

2. Both this case and the *Jennings* case are election contests under Florida Statutes § 102.168 (2006), contesting the election for the Thirteenth District in Florida for the United States House of Representatives. Both sets of plaintiffs seek to have the current certification of election results negated, although the plaintiffs in the two cases seek different forms of additional relief (Plaintiffs here request a new election without expressing any preference as to the victor; *Jennings* requests a new election as an alternative to having herself declared the victor outright). Unless the cases are consolidated, the parties face the possibility of being exposed

to two different and irreconcilable judgments ruling on the validity of the election. See *U-Haul Co. v. White*, 503 So. 2d 332 (Fla. 1st DCA 1986) (ruling consolidation proper when possibility of inconsistent verdicts existed).

3. Common questions of law exist in both cases, including without limit the following:

- a. Whether there was misconduct on the part of any elections official or any member of the canvassing board sufficient to change or place in doubt the result of the election pursuant to Florida Statutes §102.168(3)(a) (2006).
- b. Whether the failure of the iVotronic electronic voting machines to record all legal votes cast in the thirteenth Judicial District Congressional race in Sarasota County resulted in rejection of a number of legal votes sufficient to change or place in doubt the result of the election pursuant to Florida Statutes § 102.168(3)(c) (2006) such that thousands of voters lost their most fundamental right to vote in the 2006 general election for the Thirteenth District of Florida for the United States House of Representatives.

4. In addition, the two cases share numerous common questions of fact, including without limit the following:

- a. Whether the vote totals reported in the Florida Election Canvassing Commission's certification of November 20, 2006 are inaccurate in failing to count legal votes cast in Sarasota County that were improperly rejected.
- b. Whether the Sarasota County Supervisor of Elections (Defendant Kathy Dent) was on clear notice, as a result of the extreme difficulties many

voters encountered and reported during early voting, that iVotronic electronic voting machines were malfunctioning, unclear and or confusing (see Plaintiff's complaint paragraphs 18 and 19 and Jennings complaint at paragraph 30).

c. Whether Defendant Dent failed to:

- (a) Provide a ballot layout that gave voters a clear, understandable path to casting their votes for all their chosen candidates;
- (b) Adequately address serious voting problems in advance of Election Day; and/or
- (c) Provide voting systems that accurately and completely counted all votes cast.

5. Discovery efforts in the two cases will likely be duplicative. Further, consolidating the two cases would prevent unnecessary costs and delay.

6. Granting this motion to consolidate would avoid splitting the causes of action in this case and the Jennings case, avoid a multiplicity of suits, and prevent the parties from possibly being exposed to conflicting and irreconcilable judgments.

See, e.g., See U-Haul Co. v. White, 503 So. 2d 332 (Fla. 1st DCA 1986).

WHEREFORE, the Plaintiffs request that this Court grant this Motion to Consolidate this Case with the case of *Jennings v. Election Canvassing Commission of the State of Florida et al.*, Leon County Circuit Court Case No. 2006-CA-2973. A copy of a proposed order is attached.

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CERTIFICATE OF SERVICE

Pursuant I hereby certify that a true and correct copy of this Motion to Consolidate has been furnished to **Tom Gallagher**, Florida Department of Financial Services, 200 East Gaines Street, Tallahassee, FL 32399-0300; **Pete Antonacci** (counsel for Governor Jeb Bush, Secretary of State Sue Cobb, and Senator Dan Webster), Gray Robinson, 300 South Bronough Street Suite 600, Tallahassee, FL 32301; **Ron Labasky** (counsel for Supervisor of Elections Kathy Dent and Judge Phyllis Galen), Young Van Assenderp, P.A., 225 South Adams Street, Suite 200, Tallahassee, FL 32301-1700; **Stephen Demarsh** (counsel for County Commissioner Paul Mercier), Office of County Attorney, 1660 Ringling Boulevard, Fl 2, Sarasota, FL 34236-6870, and **Glenn Burhans** (counsel for Vern Buchanan), 101 East College Avenue, Tallahassee, FL 32301. this 22nd day of November, 2006.

By Rebecca H. Steele
Rebecca Harrison Steele

Courtesy Copy to:

The Honorable Judge William L. Gary

Tab 8

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

ELLEN FEDDER, LANCE JONES,
ERNEST LASCHE a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, CHARLES CLIFTON,

Plaintiffs,

No. 06 CA 2996

TCM GALLAGHER, CHIEF FINANCIAL
OFFICER, STATE OF FLORIDA, GOVERNOR
JEB BUSH, and STATE SENATOR DAN
WEBSTER, as members of and as the
FLORIDA ELECTIONS CANVASSING
COMMISSION; and SUE M. COBB, as
SECRETARY OF STATE, STATE OF FLORIDA,

and

THE SARASOTA COUNTY CANVASSING
BOARD, SARASOTA COUNTY JUDGE
PHYLLIS GALEN, SARASOTA COUNTY
COMMISSIONER PAUL MERCIER, and KATHY
DENT, SARASOTA COUNTY SUPERVISOR
OF ELECTIONS, as members of and as THE
SARASOTA COUNTY CANVASSING
BOARD, and KATHY DENT, as Supervisor of Elections,

and

VERN BUCHANAN, Nominee of the
Republican Party of Florida for the 13th
Congressional District of Florida,

Defendants.

~~PROPOSED ORDER GRANTING MOTION TO CONSOLIDATE~~

Having considered the pleadings and applicable law, it is hereby ordered and
adjudged that Plaintiffs' Motion to Consolidate is GRANTED. The above-styled matter

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CLERK OF COURT
LEON COUNTY, FLORIDA



into Judge Gary's division
 is hereby consolidated with *Jennings v. Election Canvassing Commission of the State of*

Florida et al., Leon County Case No. 2006-CA-2973. Counsel should continue to use case no. 2006-2996 for all filings in this case until
 DONE and ORDERED this *29th* day of November 2006. *further notice.*


 The Honorable Judge Janet E. Ferris

Copies to: Counsel of Record
 The Hon. William L. Gary

Signed 11/28/06

Original to Clerk /

Copies sent /

Jakes *done*

Tab 9

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
from the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

No: 2006 CA 2973

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, consisting of Governor Jeb
Bush, Chief Financial Officer Tom Gallagher, and State
Senator Daniel Webster; SARASOTA COUNTY
CANVASSING BOARD, consisting of Supervisor of
Elections Kathy Dent, Judge Phyllis Galen, and
Commissioner Paul Mercier; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; VERN BUCHANAN,
as nominee of the Republican Party for Representative
in Congress from the State of Florida's Thirteenth
Congressional District; and ELECTION SYSTEMS
& SOFTWARE, INC.,

Defendants.

FIRST AMENDED COMPLAINT TO CONTEST ELECTION

1. This is an action to contest the Elections Canvassing Commission's November 20,
2006 certification that Vern Buchanan received 369 more votes than Christine Jennings in the
election for the United States House of Representatives for Florida's Thirteenth Congressional
District. The vote totals in the certification are wrong because they do not include thousands of
legal votes that were cast in Sarasota County but not counted due to the pervasive

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malfunctioning of electronic voting machines. The number of uncounted votes in the County is more than sufficient to call into doubt, indeed to change, the result of the election. Thus, Christine Jennings is entitled to appropriate relief under Section 102.168, Florida Statutes. It is critically important that this Court provide such relief promptly -- in the form of a new election -- to ensure that the will of the people of the Thirteenth District is respected, and to restore the confidence of the electorate, which has been badly fractured by this machine-induced debacle.

2. The Elections Canvassing Commission certified vote totals exclude the legal votes of thousands of Sarasota County voters who used the County's electronic voting machines to vote in the election for the Thirteenth District seat and did not have their votes recorded. Indeed, the electronic voting machines in Sarasota County failed to record votes in this race for one out of every seven voters -- nearly 15% of those who voted using the machines. There is no possibility that so many Sarasota County voters would have voluntarily abstained from voting in this hotly contested, high-profile race. Statistical analysis confirms that common-sense conclusion. Even more strikingly, the eyewitness accounts of hundreds of Sarasota County voters, and the contemporaneous records of the Sarasota County Supervisor of Elections, document that the electronic voting machines in Sarasota County used in early voting and on November 7, 2006 were systematically failing to record votes cast for candidates in the Thirteenth District congressional race -- particularly votes cast for Plaintiff Christine Jennings.

3. By law, every polling place in Florida displays a "Voter's Bill of Rights" stating that "Each registered voter in this state has the right to: . . .Vote on a voting system that is in working condition and that will allow votes to be accurately cast." § 101.031(2), Florida Statutes (2006). In the election challenged here, Sarasota County election officials failed to deliver on that promise. Indeed, the failure to count the legal votes of the thousands of Sarasota County

voters who went to the polls and cast votes in the Thirteenth District race is a miscarriage of the electoral process that can -- *and must* -- be remedied in this contest action. These voters should not forfeit their constitutional right to vote because the County's machines malfunctioned. Yet disenfranchisement is exactly what will happen unless the Election Canvassing Commission's certification is declared void. If the uncounted legal votes in Sarasota County had been properly recorded and counted, Plaintiff would be entitled to prevail in this race. The voting percentages in the County ran significantly in Plaintiff's favor. The votes she lost due to machine malfunction would thus be more than enough to reverse the razor-thin margin Defendant Buchanan holds in the certified result. Thus, the current election result cannot stand. The voters of the Thirteenth District -- all of the voters, including those disenfranchised by machine failure -- should decide the outcome, and the proper remedy is therefore to hold a new election in the district as promptly as possible.

Common Allegations

4. This is an action to contest an election under Section 102.168, Florida Statutes, which provides that the outcome of an election "may be contested in the circuit court by any unsuccessful candidate for such office" based on the "rejection of a number of legal votes sufficient to change or place in doubt the result of the election." Fla. Stat. § 102.168(3)(c).

5. Section 102.1685, Florida Statutes, establishes Leon County as the proper venue for this action.

6. The Thirteenth Congressional District of Florida comprises all of DeSoto, Hardee, and Sarasota Counties, and parts of Charlotte and Manatee Counties.

7. Plaintiff Christine Jennings is the Democratic candidate for the Representative in Congress from Florida's Thirteenth Congressional District.

8. Section 102.111 creates the Elections Canvassing Commission and charges it with certifying elections and determining who has been elected for each office. Governor Jeb Bush, Chief Financial Officer Tom Gallagher, and State Senator Daniel Webster are the members of the Elections Canvassing Commission. Section 102.168(4), Florida Statutes, provides that the Elections Canvassing Commission is an indispensable and proper party defendant in contest proceedings for federal elections.

9. The Sarasota County Canvassing Board is constituted in accordance with Section 102.141, Florida Statutes, and is comprised of Kathy Dent, Supervisor of Elections; Phyllis Galen, county court judge, who acts as chair; and Paul Mercier, chair of the board of county commissioners. The Sarasota County Canvassing Board is charged with canvassing and certifying Sarasota County's elections to the Department of State.

10. Kathy Dent is the Supervisor of Elections of Sarasota County. Kathy Dent is a member of the Sarasota County Canvassing Board and in her capacity as Supervisor of Elections is charged with overseeing all federal, state, and county elections in Sarasota County.

11. Sue M. Cobb is the Secretary of State for the State of Florida. The Secretary serves as the State's Chief of Elections.

12. Dawn K. Roberts is the Director of the Division of Elections for the State of Florida.

13. Vern Buchanan is the Republican candidate for the Representative in Congress from the Florida's Thirteenth Congressional District. Section 102.168(4), Florida Statutes, provides that the apparently successful candidate is an indispensable party to any action brought to contest the election of a candidate.

14. Election Systems & Software, Inc. ("ES&S") is a Delaware corporation headquartered in Omaha, Nebraska and registered with the Florida Department of State, Division of Corporations to transact business in the State of Florida. ES&S transacts business with the Department of State, Division of Elections in Leon County. The Division of Elections lists ES&S on its website as a vendor of a certified voting system in the State of Florida. Copies of ES&S's program codes, user and operator manuals, and software are on file with the Department of State pursuant to Section 101.5607(1)(a), Florida Statutes. Copies of county-specific election-definition files and ballot programming modifications to ES&S's software are also on file with the Department of State pursuant to Section 101.5607(1)(a), Florida Statutes, and Rule 1S-2.015(5)(f), Florida Administrative Code. NRAI Services, Inc., located at 2731 Executive Park Drive, Suite 4, Weston, FL 33331, is ES&S's registered agent in the State of Florida.

a. ES&S is the manufacturer of the "iVotronic" touch screen voting system used in Sarasota County in the 2006 general election. The ES&S touch screen machines also constitute the primary voting system in ten other Florida counties. Additionally, ES&S provides equipment to 21 other counties in this State, as well as ongoing consulting services to election officials using its systems, including the Sarasota Supervisor of Elections.

b. As a major provider of election equipment to Florida voters, ES&S has generated millions of dollars in revenue by conducting business in the State. To continue generating such substantial revenues, ES&S seeks to maintain public confidence in its equipment. With respect to the software and source codes necessary to operate the iVotronic machines, ES&S contends that it is the owner of any trade secrets that may be related to that system. By virtue of, among other things, its substantial role in Florida elections processes, including the Sarasota County general election, as well as any claims concerning proprietary information and trade secrets,

ES&S is a proper party to this action having a cognizable interest in the outcome of these proceedings.

15. On November 7, 2006 ("Election Day"), the State of Florida conducted an election for numerous offices, including the Representative in Congress from the Thirteenth District. Early voting and voting by absentee ballot were permitted for this election (as for all state elections).

16. For both early voting and voting on Election Day, Sarasota County made use of electronic voting machines, called iVotronic machines, manufactured by Electronic Systems & Software, Inc. Sarasota County does not use iVotronic machines (or any other electronic voting machines) for absentee balloting. For absentee balloting, Sarasota County uses paper ballots read by optical-scanning equipment.

17. The first unofficial results reported on November 8, 2006 for the Thirteenth District congressional race showed that in Sarasota County, there were 58,534 votes for Vern Buchanan, 65,367 votes for Christine Jennings, and 18,382 undervotes.

18. On November 13, 2006, the Elections Canvassing Commission ordered a machine recount for the race pursuant to Section 102.141(6), Florida Statutes, because the difference in votes cast between Vern Buchanan and Christine Jennings was less than 1/2 of 1 percent.

19. On November 15, 2006, the Honorable Sue M. Cobb, Secretary of State, released the results of the machine recount and ordered a mandatory manual recount pursuant to Section 102.166(1), Florida Statutes, because the difference in votes cast between Buchanan and Jennings was less than 1/4 of 1 percent. Broken down by county, the recorded vote totals after the machine recount were as follows:

	Buchanan	Jennings
Charlotte:	4,459	4,270
DeSoto:	3,467	3,056
Hardee:	2,628	1,684
Manatee:	50,053	44,365
Sarasota:	58,535	65,366

20. On November 15, 2006, the Secretary of State also reported an “undervote” of 21,303 for the congressional race. The term “undervote” describes a situation in which a voter cast ballots for other candidates or ballot measures but did not register a vote for the particular office. *See* § 97.021(37), Florida Statutes. Broken down by county, the undervote totals were as follows:

Charlotte:	174
DeSoto:	148
Hardee:	277
Manatee:	2,324
Sarasota:	18,380

21. The undervote total for the congressional race in Sarasota County is extremely abnormal in numerous respects, including the following:

a. A total of 88,927 ballots were cast in this race on Election Day in Sarasota County on the electronic voting machines. Christine Jennings received 39,930 votes and Vern Buchanan received 36,619 votes. There were 12,378 undervotes. The undervote rate on Election Day in Sarasota County was therefore an extraordinary 13.9% of the ballots cast on the electronic voting machines.

b. A total of 30,832 ballots were cast during the early-voting process in Sarasota County, on the same type of electronic voting machines. Christine Jennings received 14,509 votes, and Vern Buchanan received 10,890 votes. There were 5,433 undervotes. The

undervote rate in the early-voting process in Sarasota County was therefore an extraordinary 17.6% of the ballots cast. And the combined undervote percentage for early and Election Day voting on the electronic voting machines was an equally extraordinary 14.9%.

c. In vivid contrast, of the 22,525 votes cast in this race by absentee ballot in Sarasota County (which were recorded by optical-scanning devices, not by electronic voting machines), Christine Jennings received 10,928 votes, and Vern Buchanan received 11,025 votes, and there were just 571 undervotes recorded -- a rate of only 2.53%, which is consistent with historical norms and expectations.

d. In equally vivid contrast, the percentage of undervotes for the House of Representatives race in other counties within the Thirteenth District did not remotely approach the undervote rates for the electronic voting machines in Sarasota County. The undervote rate for this race was 2.5% in Charlotte County, 2.2% in DeSoto County, 5.3% in Hardee County, and 2.4% in Manatee County. The combined undervote percentage for these four counties is only 2.5% -- one-sixth the undervote percentage recorded in Sarasota County for votes cast on electronic voting machines.

e. In addition, the undervote percentage recorded in Sarasota County for other high-profile races is a small fraction of the 14.9% undervote rate on electronic voting machines for the congressional race. For example, the undervote percentage recorded in Sarasota County for the Governor's race was 1.28% and the undervote percentage for the United States Senator's race was 1.14%.

f. Finally, the percentage of undervotes on electronic voting machines for the congressional contest in Sarasota County in 2006 is almost seven times the rate of undervotes

for the Thirteenth District congressional race in 2002 (the last midterm election), which was 2.2%.

22. In 2001, Sarasota County became the first county in Florida to use the iVotronic voting system. They have been used since 2001 in at least 19 separate primary, general, and local elections. In the 2006 election, Sarasota County voters were asked whether to adopt a proposed county charter amendment requiring that as of January 1, 2008, all county voting systems provide a voter-verified paper ballot and that mandatory audits of election results be conducted in every election comparing hand counts to machine counts. The county adopted the proposed charter amendment with the support of 55.4% of voters, indicating that voters themselves have lost confidence that the iVotronic system is capable of correctly recording their votes. Significantly, the undervote rate for this proposed charter amendment was only 6.2%.

23. The statistical evidence alone indicates that the staggeringly large number of undervotes in Sarasota County is due to the malfunctioning of the iVotronic electronic voting machines. In fact, preliminary expert statistical analysis of the reported election results concludes there is little doubt that the use of the iVotronic machines in Sarasota County caused the extraordinarily high rate of undervotes in that county. The fact that undervote rates from the rest of the district and from absentee voters in Sarasota County were so much lower than rates from voters using the iVotronic machines in Sarasota County rules out the possibility that the extraordinarily high Sarasota County undervote rates were caused by factors common throughout the district --- such as voter abstention due to negative campaigning or dissatisfaction with both candidates. Evidence that such alternative explanations were causing high undervote rates would have shown up throughout the district, not in a single county, and not just among one type of voting machine in that county. Additionally, the fact that a higher undervote rate was present on

identical electronic voting machines in two different modes of voting that occurred at different times --- early voting (from October 23 to November 5) and Election Day voting (November 7) --- creates an overwhelming suspicion that the problems pertain to the use of these electronic machines in Sarasota County. An examination of the source code for the ES&S iVotronic voting system and of any modifications made to it for the purpose of creating county-specific election-definition files and ballot programming is necessary to determine conclusively the cause of the massive undervote in Sarasota County. These codes and files are escrowed with the State pursuant to Section 101.5607, Florida Statutes, and Rule 1S-2.015(5)(f), Florida Administrative Code.

24. It is extremely unlikely that an undervote rate of the magnitude that occurred in Sarasota County can be principally attributed to voter confusion or ballot design. Even the most egregious examples of voter confusion caused by ballot design in other races do not yield undervote percentages remotely as high as those present in the Thirteenth District congressional race. For example, the infamous "butterfly ballot" used in Palm Beach County, Florida in the 2000 presidential race caused fewer than 1% of the presidential votes cast in that election to be erroneously cast for the independent candidate Pat Buchanan. Moreover, because of pervasive problems with electronic voting machines during early voting in Sarasota County -- widely reported in the press before and on Election Day and in public statements by Sarasota County Supervisor of Elections Kathy Dent -- Sarasota County voters were alert to the risks of ballot confusion, and thus highly unlikely to have fallen victim to it.

25. As powerful as this statistical evidence is, it is far from the only indication that thousands of legal votes in Sarasota County simply were left out of the certified election results for the congressional race because of the failure of electronic voting machines. A variety of

contemporaneous sources document widespread problems with the iVotronic electronic voting machines in Sarasota County. These documents, including both the statements of voters and contemporaneous records maintained by the Sarasota County Supervisor of Elections, identify a consistent pattern of voter difficulty in having their votes recorded in the House of Representatives race -- and not in other races on the ballot.

26. Plaintiff has obtained affidavits memorializing the eyewitness accounts of hundreds of Sarasota County voters attesting to their difficulties attempting to cast a vote for Christine Jennings in early voting and on Election Day on iVotronic electronic voting machines in Sarasota County. The following statements are representative of the memorialized eyewitness accounts of these hundreds of voters:

- “I went through the ballot making my selections on the Ivotronics touch screen voting machine and took my time making sure that I voted in every race. I am certain that I cast a vote for Christine Jennings. When I reviewed the ballot at the end of the voting process, I noted that the race for the 13th congressional district . . . indicated that I had made no selection. I double-touched the 13th Congressional District race and again cast my vote for Christine Jennings. . . . I have more than 15 years experience in selling computer systems, five of those years are in selling touch screen systems. Based on my experience, I believe there was a software bug in the voting machine software causing the software not to register the touch.”

- "I took a sample ballot, which I had previously filled out and my intention to vote in every race. I believed that I voted for Christine Jennings but I came to the review screen it said I had not cast a vote in the Congressional race. . . . I used the back arrow and it took me back to Congressional race and I recorded a vote for Christine Jennings."
- "When my husband and I voted on the iVotronics touch screen voting machines, I was told by a poll worker to be sure and check the District 13 Congressional race because several voters, even at that early hour, had complained that they had voted for Christine Jennings, but the summary page did not reflect their votes for Christine Jennings."
- "When I voted on the iVotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it did not show a vote for Christine Jennings or anyone else."
- "There was no warning or mention of any problems however, I was aware there may be a problem with the Congressional vote based on various media reports. I went through the ballot and specifically remember voting for Christine Jennings. When I arrived at the review screen, there was no candidate selected for the Congressional vote. I called a poll worker over and explained the situation and she told me that I did not 'press hard

enough' when selecting the vote and I then returned to the vote screen and recast my ballot, I then confirmed it on the review screen."

- "When I voted on the touch screen voting machine I touched the screen voting for Christine Jennings and when I reached page 15, the summary page, it indicated that I had not voted for Jennings. I immediately called this to the attention of a poll worker who showed me how to go back and vote for Jennings. I followed her instructions and again voted for Jennings. It did appear on the summary screen this time and I hope was duly registered."
- "When I voted on the ivotronics touch screen voting machine I touched screen and voted for Christine Jennings for U.S. Congress Florida District 13. When I reviewed my ballot before hitting the red button and actually voting, I saw the review screen did not show a vote for Christine Jennings. I was afraid I would lose my other votes if I tried to go back and correct the problem, so I then went ahead and cast my ballot without confirming that the machine had registered my vote for Christine Jennings."
- "I attempted to vote for Christine Jennings in the District 13 race and experienced the following difficulties: I was well-aware of the difficulties in the early voting in District 13 race and so I carefully voted in each election on the ballot, including that race. When I got to the review page,

my vote for Christine Jennings was not reflected. I called out to a poll worker to alert them that my vote in the District 13 race had not been recorded. The poll worker who came to assist me informed me that the same thing had happened to her when she had voted earlier. She guided me back to the District 13 page and I pressed the touch screen again to reflect my vote for Christine Jennings. The poll worker then guided me back to the review page where my vote in the District 13 race was reflected and I then pressed the vote button.”

- “When I voted on the ivotronics touch screen voting machine, I went through the ballot to vote. I was being careful because I seemed to have to press hard for my votes to register. In addition, I knew to be careful because my wife had been to vote previously and had overheard some women who had a problem voting discussing their problems with the machines. They were different machines. A neighbor also told me that she had encountered six different people who had a problem with the voting machines. When the review sheet came up it said that I had not voted in the Congressional race even though I knew I had voted for Christine Jennings. I went back and registered my vote again and this time it indicated that I had voted for Ms. Jennings on the review screen.”
- “When I voted with the stylus on the ivotronics touch screen voting machine, I am absolutely sure the box for Christine Jennings showed the

X. On the Review screen, however, Christine Jennings' name showed but the box beside her name was blank. I clicked on the review ballot and corrected my vote and it then showed an X beside her name. After that, I registered my vote with the Red button at the top of the screen. After voting, I asked my husband if anything unusual happened when he voted (on a different machine). He told me that when he reviewed his ballot, the box by Christine Jennings' name was blank and he had to correct it. At that time, I reported this to a poll worker named Charlie, who said he would report it.

- "I had heard prior to going to the poll that there were problems with the voting machines. When I went to vote, the poll worker also warned me that there had been problems with the machine registering the Congressional race. When I voted on the iVotronics touch screen voting machine, I voted for Christine Jennings. The screen indicated I had voted. Yet when I got to the end, the review page indicated that I had not voted in the Congressional race. I went back and voted for Ms. Jennings. This time my vote did register on the voting page."
- "When I voted on the iVotronics machine I was being very methodical. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure that the box was checked before I went to the next page. When I got to the review screen it

reflected no vote was cast for the Congressional race, but both candidates' names were shown. All of my other selections were properly recorded. I touched where it said no vote had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and carefully rechecked the review page three times. I then pushed the vote button. No report was made to the poll worker. Prior to voting, the poll worker recommended that I check the review page before casting my final ballot. I am a registered Republican and I believe these machines failed democracy."

- "I voted on the iVotronics machine I took my time to be sure I did not make any errors. When I voted in the Buchanan-Jennings race, I specifically voted for Christine Jennings and checked to make sure the box was checked before I went to the next page. When I got to the review screen it reflected no vote was cast for the Congressional race. All of my other selections were properly recorded. I touched where it said no vote had been cast and it took me back to the Buchanan-Jennings race. I then re-voted for Christine Jennings and I then pushed the vote button. "
- "When I voted on the ivotronics touch screen voting machine I touched the screen for Christine Jennings and it showed I voted for Christine Jennings. But when I reviewed the summary page at the end of the ballot, it not only failed to show a vote for Christine Jennings, but the only name

to appear on the review page was Christine Jennings, next to a blank box indicating no vote had been cast. I called a poll worker over and explained what had happened and the poll worker pulled back the page for the Congressional race. I revoted for Christine Jennings, and my vote appeared to register in my second review of the summary screen.”

- “When I voted on the touch screen voting machine I encountered two problems with the machine. First, after I had voted for Christine Jennings on the top of the second screen, when I pushed my selection for Jim Davis for Florida Governor next, the “X” on the computer screen came up indicating that I had voted for Charlie Crist. I called a poll worker, advised her of the problem and she showed me how to change my vote to Jim Davis. I then proceeded to vote on every race I saw on the ballot. When I got to the review screen, it showed Christine Jennings name, but unlike all the other names and races on the review screen, there was no X in the box next to Christine Jennings’ name. I am certain that I had initially cast a vote for Christine Jennings as my two main purposes in voting were to vote for Christine Jennings for Congress and Jim Davis for Florida Governor. I again called a poll worker who told me to hold my finger down on the box next to Christine Jennings name on the review screen until the X came up. I did so and then pushed the ‘Vote’ button.”

- “When I arrived at the polls I was warned by a poll worker that some votes from ‘page 2’ were not being registered. I waited on line for 45 minutes to vote and when I returned home, informed my wife of what I had been warned.”
- “I had heard earlier media reports and was aware that there were some problems with the machines. When I arrived, I specifically asked if there had been problems and I was told no issue or problems had arisen. I voted for Christine Jennings on a touch screen and when I arrived at the review page the Congressional vote was left blank. I called a poll worker over at that time and she showed me how to move back and I re-cast my vote for Christine Jennings. On the final review page, I confirmed my vote was cast. I approached a poll worker to complain about the situation and filled out a complaint card.”

27. These eyewitness accounts, and hundreds of others like them, attest to pervasive difficulties in the recording of votes in the Thirteenth District congressional race. Although many of these voters believed that they were able eventually to overcome the machine difficulties and cast a recorded vote for Plaintiff Christine Jennings, the problems the iVotronic machines exhibited in recording the legal votes of these and thousands of other voters provide substantial grounds for doubting whether the votes were in fact counted. The information voters see on the touch-screen of an electronic voting machine when they cast their votes is stored in the machine’s temporary, volatile computer memory. A permanent record of a vote is made only

when -- upon pressing the "Vote" button -- the voter's recorded preference is transferred from the temporary volatile memory on the computer to permanent nonvolatile memory. If, as the statistical evidence suggests is overwhelmingly likely, a software "bug" or other malfunction disrupts or prevents the transfer of the recorded legal vote from temporary to permanent memory, the voter may well see a vote cast for Jennings on his or her review screen even though no permanent record of the vote is ever recorded.

28. Poll watchers also reported their observations of widespread occurrences of voters being unable to have their votes in the congressional race recorded by iVotronic electronic voting machines. One poll watcher reported as follows: "There were seven ivotronics touch screen voting machines at the precinct where I was watching the voters. Two of the ivotronics touch screen voting machines stopped working while I was watching the voters. After an hour or so, one was repaired and put back into service. The other was put back into use without repair except that the poll workers instructed voters to hold their finger on the touch screen for more time, rather than just touch [the] screen to get the vote to register. I heard several voters tell poll workers the ivotronics touch screen voting machine was not recording their vote."

29. Contemporaneous official "Incident Report Forms" of the Sarasota County Supervisor of Elections likewise document widespread occurrences of voters having great difficulty in having the iVotronic electronic voting machines record their votes in the Thirteenth District race. Numerous such forms noted that iVotronic electronic voting machines were "not recording votes." One report from a particular precinct noted that a "voter voted on screen -- didn't show up on review . . . asked poll worker for help . . . [c]ancelled ballot and moved to another machine," and went on to observe "more than one [voter] with trouble on machine." Another incident report observed that "[e]very other voter is complaining about the Christine

Jennings contest not coming up.” Indeed, these incident reports document multiple instances of frustrated voters telling election officials at the polling places that “voting machine[s] would not let her vote for Jennings.”

30. Other contemporaneous official forms maintained by the Sarasota County Supervisor of Elections similarly document that iVotronic electronic voting machines used in the County were not recording the votes that voters had cast. Machines were taken out of service on Election Day because they were “slow to respond to touch” or “required a hard/extended touch before [a] vote was recognized,” or because they were “not recording some votes [and] the touchscreen was not working properly -- hard to record vote, needed to push hard and juggle to record vote,” or because they were “not accepting votes.” Technical support personnel reported receiving “several complaints that voters make selections that do not appear on the summary screen” and that “the selection has to be highlighted . . . two or three times before the summary page reflected the suggestions.” Other reports indicate that “voters reported making a selection but the selection did not appear on the review screen,” requiring further corrective action by the voter, and that particular machines “miss[] selections on some pages.” One report by a Sarasota County technical support person indicated that a particular electronic voting machine “will not register votes no matter how hard you press screen.”

31. Significantly, the records of the Sarasota County Supervisor of Elections document that election officials were on clear notice, as a result of the extreme difficulties many voters encountered during the early-voting phase, that the iVotronic electronic voting machines were malfunctioning with respect to the Thirteenth District congressional race. Nevertheless, the County election officials do not appear to have taken *any* steps to correct the serious machine problems in advance of Election Day.

32. This machine-induced failure had significant, indeed, determinative, effects on the outcome of the election for the Thirteenth District congressional seat. Preliminary statistical analysis (based on the undervote rates for the election in Sarasota County absentee ballots, and in other counties) indicates that more than 14,000 Sarasota County voters (the differential over and above the expected undervote rate) cast legal ballots but failed to have their legal votes recorded. Given that the certified election results give Defendant Buchanan a lead of only 369 votes, and given that Plaintiff Jennings carried Sarasota County while Defendant Buchanan carried the rest of the district, the failure to include 14,000 or more votes in the final tally places the outcome of the election into grave doubt. Indeed, preliminary statistical analysis indicates that inclusion of these 14,000 or more Sarasota County votes would change the outcome of the election, because the Sarasota County voters whose votes were recorded in the election favored Plaintiff Christine Jennings by a significant margin.

Count I

33. Plaintiff realleges paragraphs 1 - 32.

34. As a result of the failure of iVotronic electronic voting machines to record all legal votes cast in the Thirteenth District congressional race in Sarasota County, thousands of votes legally cast in that race were not included in the vote totals certified by the Elections Canvassing Commission on November 20, 2006. The failure to include these votes constitutes a rejection of a number of legal votes sufficient to place in doubt, and likely change, the outcome of the election.

35. Given the extremely narrow margin of 369 votes in the certified election results, it is self-evident that the number of uncounted legal votes in Sarasota (which preliminary statistical

analysis reveals to be at least 14,000) is sufficient to place in doubt, and likely change, the outcome of the election.

36. Given the relative percentages of the actual votes cast in Sarasota County in the Thirteenth District election, it is likely that including the uncounted legal votes cast in Sarasota County would change the outcome of the election and result in a victory for Plaintiff Christine Jennings.

37. Therefore, under Section 102.168, Florida Statutes, Plaintiff Christine Jennings is entitled to prevail in this contest action, and should be awarded all appropriate relief.

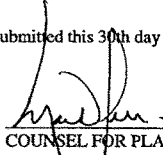
Prayer for Relief

Wherefore, Plaintiff prays that the Court:

1. Advance this matter on the Court's docket.
2. Order immediate discovery, including discovery of the source code to the ES&S iVotronic voting system with all county-specific election-definition files and ballot programming modifications, which is necessary to determine conclusively the cause of the massive undervote in Sarasota County.
3. Convene a status conference promptly to establish an expeditious schedule for completing discovery and conducting a hearing.
4. Set this matter for a prompt hearing pursuant to Section 102.168(7), Florida Statutes.
5. Order the Elections Canvassing Commission to declare void the results of the 2006 general election for Representative from Florida's Thirteenth Congressional District.

6. Order the Elections Canvassing Commission to decertify Vern Buchanan as the winner of the 2006 general election for Representative from Florida's Thirteenth Congressional District. *See* Fla. Stat. § 102.1682.
7. Enter a finding that Plaintiff is entitled to the office of Representative from Florida's Thirteenth Congressional District, Section 102.1682, Florida Statutes, or, in the alternative, declare the congressional seat for Florida's Thirteenth Congressional District vacant such that a special election shall take place pursuant to Sections 100.101(1) and 100.111(3), Florida Statutes, or order a new election to determine the winning candidate for the United States House of Representatives seat.
8. Order all other appropriate relief, including an award of fees and costs.

Respectfully submitted this 30th day of November, 2006 by:


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Tab 10

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

Case No.: 2006 CA 2973

vs.

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA; SARASOTA COUNTY
CANVASSING BOARD; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; VERN BUCHANAN, as
nominee of the Republican Party for Representative in
Congress from the State of Florida's Thirteenth
Congressional District; and ELECTION SYSTEMS
& SOFTWARE, INC.,

Defendants.

ELLEN FEDDER, LANCE JONES
ERNEST LASCHE a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, CHARLES CLIFTON,

Plaintiffs

Case No.: 2006 CA 2996

vs.

TOM GALLAGHER, CHIEF
FINANCIAL OFFICER, *et al.*

Defendants.

**PLAINTIFF JENNINGS' MOTION TO COMPEL PRODUCTION OF ITEMS WITHIN
THE CUSTODY AND CONTROL OF THE STATE UNDER FLA. STAT. § 101.5607
AND FLA. ADMIN. CODE RULE 1S-2.015(5)(f)**

On November 20, 2006, Plaintiff Christine Jennings submitted a request for production and moved to compel expedited discovery of the Election Systems & Software, Inc. ("ES&S") source code to the iVotronic system, to all elements of the Unity software suite, and to all personal electronic ballots ("PEBs") as used in the November 2006 general election in Sarasota County and/or as escrowed with the Department of State under Section 101.5607(1)(a), Florida Statutes. On November 21, 2006, the Court denied Plaintiff's request for production of the source code, without prejudice. The Court suggested that ES&S be given the opportunity to be heard on this issue before it made a final determination. *See* Hrg. Tr. at 42 (Nov. 21, 2006).

- Pursuant to the Court's suggestion, Plaintiff has amended its complaint to add ES&S as a defendant given that it is a party in interest to this proceeding.
- However, Plaintiff respectfully submits that the requested discovery it seeks is within the State's possession, custody, and control, not ES&S's, and that it is the State's responsibility to comply with Plaintiff's discovery request.
- Plaintiff hereby renews its request for production and moves to compel production of the source code from the State Defendants pursuant to the following memorandum of

law and points of authority. Now that ES&S is a party to this case, it will have notice and a full opportunity to be heard.

I. THE REQUESTED DISCOVERY IS WITHIN THE STATE'S POSSESSION, CUSTODY, AND CONTROL.

The information that Plaintiff seeks resides with the State, not ES&S. Plaintiff does not seek the generic software and source codes that may be in the possession of ES&S in Omaha, Nebraska, but rather, the software, source code, and related materials that are specific to the November 2006 general election in Sarasota County and that are indisputably required to be on file with the State here in Tallahassee. Section 101.5607(1)(a), Florida Statutes, requires that “[c]opies of the program codes and the user and operator manuals and copies of all software and any other information, specifications, or documentation . . . relating to an approved electronic or electromechanical voting system and its equipment must be filed with the Department of State by the supervisor of elections at the time of purchase or implementation.” The statute further provides that “[a]ny such information or materials that are not on file with and approved by the Department of State, including any updated or modified materials, may not be used in an election.” Fla. Stat. § 101.5607(1)(a).

The Florida Administrative Code also requires that “a copy of the software and parameters used within the voting system to define the tabulation and reporting instructions for each election” must be placed on file with the Division of Elections “regardless of filings for previous elections.” Fla. Admin. Code Rule 1S-2.015(5)(f) (effective Nov. 24, 2004). The rule states that the “filing shall, at a minimum, include the following:

1. Copy of the voting system software;

2. Copy of the administrative database used to define the election;
3. Copy of all election-specific files generated and used by the system;
4. Documentation stating the release level of the precinct tabulation equipment and firmware; and
5. If the election definition is created by an individual who is not an employee of the supervisor of elections, then the parameters shall include a statement signed by the person who created the election definition." *Id.*

Thus, as set forth in Florida law, copies of all of the voting system software and related materials used by Sarasota County in the November 2006 general election and sought by Plaintiff must be on file with the State Division of Elections. Indeed, at a hearing before the Court on November 21, 2006, counsel for the State Defendants conceded that "the Secretary of State maintains a copy of the source code as provided in the statute." Hrg. Tr. at 25 (Nov. 21, 2006). The State Defendants have suggested that it is Plaintiff's responsibility to work out these discovery issues with ES&S. *See* Hrg. Tr. at 26 (Nov. 21, 2006). But what Plaintiff seeks is within the State's possession, custody, and control, not ES&S's. It is the State's responsibility to address with ES&S any issues regarding this discovery request.

II. THE STATE HAS NO BASIS TO REFUSE THE REQUESTED DISCOVERY.

Based upon the State's November 21, 2006 Response to Plaintiff's Motion to Compel Expedited Discovery, Plaintiff anticipates that the State will invoke the trade secrets privilege set forth in Section 90.506, Florida Statutes, as a basis for refusing the requested discovery. But the State has no privilege to refuse the requested discovery. Under Section 90.506, Florida Statutes, "[a]

person has a privilege to refuse to disclose, and to prevent other persons from disclosing, a trade secret *owned by that person* if the allowance of the privilege will not conceal fraud or otherwise work injustice.” Fla. Stat. § 90.506 (emphasis added). The statute provides that the “privilege may be claimed by the person or the person’s agent or employee.” The State is neither the owner of the trade secret nor the owner’s agent or employee. Thus, the State may not assert the trade secrets privilege to refuse the Plaintiff’s requested discovery because it is not the holder of the privilege.

Nor may the State refuse discovery on the basis that the requested material is exempted from disclosure under the Public Records Act. *See* Section 119.071(f), Florida Statutes. It is well-established that “a document’s exemption from disclosure under the Public Records Act does not render it automatically privileged for the purposes of discovery pursuant to the Florida Rules of Civil Procedure.” *Dept. of Professional Regulation v. Spiva*, 478 So. 2d 382, 383 (Fla. 1st DCA 1985). As the Florida Supreme Court stated in *Wait v. Florida Power & Light Company*, 372 So. 2d 420 (Fla. 1979): “[W]e do not equate the acquisition of public documents under chapter 119 with the rights of discovery afforded a litigant by judicially-created rules of procedure.” *Id.* at 425; *see also State Dept. of Highway Safety v. Kropff*, 445 So. 2d 1068, 1068 n.1 (Fla. 3d DCA 1984) (“Although the Rules of Civil Procedure and the Public Records Act may overlap in certain areas, they are not coextensive in scope.”). Thus, the exemption of the requested material from Florida’s Public Records Act affords the State no refuge.

There is simply no statutory or common-law basis for the State to refuse discovery. If the State anticipates that production of the requested discovery will subject it to liability to ES&S -- the

holder of the trade secrets privilege -- then the State should address those issues with ES&S. The State has no basis to refuse the requested discovery itself.

III. ENTRY OF A PROTECTIVE ORDER CAN ADEQUATELY PROTECT ANY CONCERNS ABOUT TRADE SECRETS.


This Court has recognized that there are “generally ways to get around the public becoming aware what is in the source code.” Hrg. Tr. at 42 (Nov. 21, 2006). Plaintiff is fully prepared to abide by any protective orders the Court deems necessary in “the interests of the holder of the privilege, the interests of the parties, and the furtherance of justice.” Fla. Stat. § 90.506; *see also* Fla. R. Civ. P. 1.280(c)(7) (authorizing issuance of order to protect disclosure of trade secrets); *Seta Corp. of Boca, Inc. v. Office of Attorney General*, 756 So. 2d 1093, 1094 (Fla. 4th DCA 2000) (“[C]ourts can order disclosure of trade secrets so long as protections are taken to see that they are not disclosed to competitors.”).

In the interest of expediency, by separate motion, Plaintiff has moved for a protective order. As set forth in that motion, the proposed protective order is routine and will facilitate discovery and resolution of this case.

CONCLUSION

For the foregoing reasons, Plaintiff Jennings respectfully requests that this Court grant its Motion to Compel Production of Items Within the Custody and Control of the State Under Fla. Stat. § 101.5607 and Fla. Admin. Code Rule 1S-2.015(5)(f) and enter the proposed Protective Order set forth in the accompanying Motion for Entry of a Protective Order.

Respectfully submitted this 30th day of November, 2006 by:



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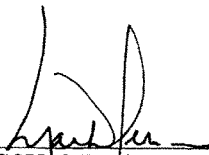
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Tab 11

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

Case No.: 2006 CA 2973

vs.

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA; SARASOTA COUNTY
CANVASSING BOARD; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; VERN BUCHANAN, as
nominee of the Republican Party for Representative in
Congress from the State of Florida's Thirteenth
Congressional District; and ELECTION SYSTEMS
& SOFTWARE, INC.,

Defendants.

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ERNEST LASCHE a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, CHARLES CLIFTON,

Plaintiffs

Case No.: 2006 CA 2996

vs.

TOM GALLAGHER, CHIEF
FINANCIAL OFFICER, *et al.*

Defendants.

PLAINTIFF JENNINGS' MOTION FOR ENTRY OF A PROTECTIVE ORDER

Plaintiff Christine Jennings hereby moves for entry of a protective order pursuant to Florida Rule of Civil Procedure 1.280(c) to ensure that Plaintiff is able to access the information she needs while at the same time protecting any proprietary interests ES&S has in its source code.

- Rule 1.280(c) provides that upon a showing of good cause, a court may enter a protective order providing that “a trade secret or other confidential research, development, or commercial information not be disclosed or be disclosed only in a designated way.” Fla. R. Civ. P. 1.280(c)(7).
- The protective order proposed here fits comfortably within Rule 1.280(c)’s bounds, respecting both the business interests of the party whose information may be at stake here and the civic interests of the public that deserves access to an important proceeding like this.
- Plaintiff has shown a reasonable necessity for the requested information because examination and testing of the ES&S source code and related materials is vital to Plaintiff’s case.
- Protective orders such as the one proposed by Plaintiff are routinely used in cases involving trade secrets. The proposed protective order will facilitate discovery and resolution of this case.

**PLAINTIFF'S NEED FOR THE INFORMATION OUTWEIGHS
DEFENDANT ES&S'S SPECULATION ABOUT ANY HARM.**

Florida provides statutory protection for trade secrets pursuant to Section 90.506, Florida Statutes. However, the trade secrets privilege “is not absolute; in each case the trial judge must weigh the importance of protecting the claimant’s secret against the interest in facilitating the trial and promoting a just end to the litigation.” CHARLES W. EHRHARDT, EVIDENCE § 506.1 (2006). Moreover, the trade secrets privilege must give way when application of the privilege would work an injustice under the statute. *See* Fla. Stat. § 90.506; *Becker Metals Corp. v. West Florida Scrap Metals*, 407 So. 2d 380, 382 (Fla. 1st DCA 1981).

Here, denial of the source code to Plaintiff would work an injustice under the statute while access would undeniably facilitate the trial in this case and promote a just end to the litigation. As set forth in Plaintiff’s First Amended Complaint and the November 20, 2006 Declaration of Plaintiff’s Expert Dan Wallach attached thereto, access to the source code is vital to Plaintiff’s case because the only way to conclusively identify the software “bug” that may have caused the malfunction of the iVotronic voting system in the 2006 general election is through examining and testing the source code. *See* Wallach Decl. at 4-5. In addition, examining and testing the source code will enable Plaintiff to evaluate the State’s audit of the iVotronic system. As experts have recognized, “[w]ithout access to the source code that runs the [electronic voting machine], auditing becomes a pointless endeavor because all an auditor has to work with is potentially flawed election data produced by a black box in which it is impossible to see how it created that data.” Andrew Massey, “*But We Have To Protect Our Souce!*”: *How Electronic Voting Companies’ Proprietary Code Ruins Elections*, 27 HASTINGS

COMM. & ENT. L.J. 233, 234 (2004). The source code information is clearly relevant and “there is no other practicable means of obtaining the information.” *Freedom Newspapers, Inc. v. Egly*, 507 So. 2d 1180, 1184 (Fla. 2d DCA 1987). Thus, Plaintiff has met the threshold test of showing a “reasonable necessity for the requested materials.” *Sheridan Healthcorp, Inc. v. Total Health Choice, Inc.*, 770 So. 2d 221, 222 (Fla. 3d DCA 2000).

When weighing the Plaintiff’s interest in access to the source code against the Defendant’s interest in maintaining confidentiality, the trade secrets privilege must be considered in context. As Florida courts have recognized, the privilege is typically invoked in “suits between competitors.” *Freedom Newspapers*, 507 So. 2d at 1184; *see Fortune Personnel Agency of Ft. Lauderdale, Inc. v. Sun Tech, Inc. of South Florida*, 423 S.2d 545, 546 n.6 (Fla. 4th DCA 1982). Here, the Plaintiff is not a competitor to ES&S and has no interest in using any proprietary information for commercial advantage. Plaintiff’s only interest is in the integrity of the November 2006 election. Thus, “[t]he likelihood of [any] abuse of the discovery process is lessened where, as here, the party seeking discovery appears to have no real interest in the business techniques of the [party invoking the trade secrets privilege].” *Freedom Newspapers*, 507 So. 2d at 1184; *see also Seta Corp. of Boca, Inc. v. Office of Attorney General*, 756 So. 2d 1093, 1094 (Fla. 4th DCA 2000) (ordering production of material that a party claimed was protected by trade secrets privilege because the court found it “significant in this case that it is the State of Florida, not a competitor, who is seeking this information”).

Moreover, when the trade secrets privilege is asserted, “the burden is on the party resisting discovery to show ‘good cause’ for protecting or limiting discovery by

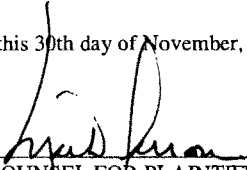
demonstrating that the information sought is a trade secret or confidential business information and that disclosure may be harmful.” *American Express Travel Related Servs., Inc. v. Cruz*, 761 So. 2d 1206, 1209 (Fla. 4th DCA 2000). Here, Plaintiff concedes for purposes of this motion that the ES&S source code constitutes a trade secret, but argues that with the proposed protective order in place, there will be no harm to ES&S. *See Seta Corp.*, 756 So. 2d at 1094 (“[C]ourts can order disclosure of trade secrets so long as protections are taken to see that they are not disclosed to competitors.”); *Grooms v. Distinctive Cabinet Designs, Inc.*, 846 So. 2d 652, 655 (Fla. 2d DCA 2003) (recognizing that trade secrets can be produced if disclosure is “carefully regulated to ensure no improper use of the information”). Protective orders such as the one Plaintiff proposes are routinely used to protect trade secrets such as this. *See, e.g., Home Depot U.S.A., Inc. v. Bencsik*, 697 So. 2d 232, 233 n.1 (Fla. 5th DCA 1997) (noting that a “customary protective order of confidentiality would be sufficient to obviate [an] objection” based on the “commercial sensitivity of . . . documents”).

Given that access to this information is vital to Plaintiff’s case and that the proposed protective order can adequately accommodate the interests of Defendant ES&S, the balance clearly tips in favor of disclosure of the requested materials to Plaintiff under the terms of the attached proposed protective order.

CONCLUSION

For the foregoing reasons, the Court should enter the attached proposed Protective Order.

Respectfully submitted this 30th day of November, 2006 by:


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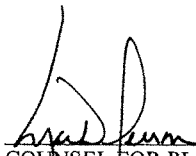
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**IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION**

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

Case No.: 2006 CA 2973

vs.

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA; SARASOTA COUNTY
CANVASSING BOARD; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; VERN BUCHANAN, as
nominee of the Republican Party for Representative in
Congress from the State of Florida's Thirteenth
Congressional District; and ELECTION SYSTEMS
& SOFTWARE, INC.,

Defendants.

ELLEN FEDDER, LANCE JONES
ERNEST LASCHE a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, CHARLES CLIFTON,

Plaintiffs

Case No.: 2006 CA 2996

vs.

TOM GALLAGHER, CHIEF
FINANCIAL OFFICER, *et al.*

Defendants.

[PROPOSED] PROTECTIVE ORDER

Good cause having been shown, and in order to facilitate necessary discovery in this case, IT IS HEREBY ORDERED that this Protective Order pursuant to Rule 1.280(c) be, and is hereby, entered.

1. This Protective Order shall be applicable to any trade secret owned by Defendant Election Systems & Software, Inc. ("ES&S"). A trade secret is defined by Florida's Uniform Trade Secrets Act, Section 688.002(4)(a), Florida Statutes, as "information, including a formula, pattern, compilation, program, device, method, technique, or process that: (a) [d]erives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use; and (b) [i]s the subject of efforts that are reasonable under the circumstances to maintain its secrecy."

2. Any trade secret produced by any party as part of discovery in this action may be designated as "Confidential" by such party and may be disclosed or otherwise communicated or made available in whole or in part only to the following persons:

a. Counsel of record in this litigation and in other proceedings related to the November 2006 general election, and staff and supporting personnel of such attorneys, such as paralegals, secretaries, stenographic and clerical employees and contractors, and outside copying imaging and presentation services, who are working under the direction of such attorneys;

b. The parties herein and the parties in other proceedings related to the November 2006 general election who are necessary for the furtherance of this litigation or such other proceedings;

c. Persons who are expressly retained or sought to be retained by a party or a party's counsel as consultants or testifying experts; provided that the disclosure of "Confidential"

material to any persons under this subparagraph shall only be to the extent necessary to perform their work on this litigation or other proceedings related to the November 2006 general election.

d. Any other persons who are designated to receive material designated “Confidential” by order of this Court after notice to the parties, or by written stipulation of the parties.

e. Any person of whom testimony is taken in this action or in other proceedings related to the November 2006 general election.

f. The Court and Court personnel, court reporters, interpreters and videographers employed in connection with this litigation or other proceedings related to the November 2006 general election.

3. Each person set forth in Paragraph 2 who is not (i) a party to this litigation or other proceedings related to the November 2006 general election, counsel for such parties, or staff and supporting personnel of such parties or attorneys; or (ii) the Court or Court personnel to whom material designated under this Protective Order is to be disclosed, shall, prior to receiving such material, be furnished with a copy of this Protective Order, and a copy of the Nondisclosure Agreement Pursuant to Protective Order (attached as Exhibit A), which the person shall read and sign.

4. The recipient of any material designated under this Protective Order shall use reasonable efforts under the circumstances to maintain the confidentiality of such information.

5. A party shall not be obligated to challenge the propriety of material designated under this Protective Order at the time the designation is made, and failure to do so shall not preclude a subsequent challenge thereto. In the event that any party to this litigation disagrees at any stage of these proceedings with such designation, such party may request that the

designating party modify or remove its designation or may request from the Court a hearing at the Court's earliest convenience. The burden of proving that information has been properly designated under this Protective Order is on the person or entity making such designation.

6. All counsel for the parties who have access to information or material designated under this Protective Order acknowledge they are bound by this Protective Order and submit to the jurisdiction of the Court for purposes of enforcing this Protective Order.

7. Within sixty (60) days after the final termination of litigation between the parties, including this action and all other proceedings related to the November 2006 general election, all material designated under this Protective Order and all copies thereof (including summaries and excerpts) shall be either returned to the party that produced it or destroyed and a certification of destruction supplied to the producing party; provided, however, that for each party, counsel who is entitled to access to such designated material may retain complete and unredacted copies of its work product that contains designated material as well as pleadings and papers filed with the Court or served on the other party. This Protective Order shall survive the final termination of this litigation with respect to any such retained confidential material.

SO ORDERED.

Date

The Honorable William L. Gary

EXHIBIT A**NONDISCLOSURE AGREEMENT PURSUANT TO PROTECTIVE ORDER**

I, _____, certify that I have read the Protective Order (the "Order") entered in *Jennings v. Elections Canvassing Comm'n of the State of Florida*, Case No. 2006 CA 2973, Circuit Court for the Second Judicial Circuit in and for Leon County, Florida, and that I understand the terms, conditions, and restrictions it imposes on any person given access to Defendant ES&S's trade secrets. I recognize that I am bound by the terms of that Order, and I agree to comply with those terms. I will not disclose Defendant ES&S's trade secrets to anyone other than persons specifically authorized by the Order and agree to return all such materials that come into my possession to counsel from whom I received such materials. I consent to be subject to the personal jurisdiction of the Circuit Court for the Second Judicial Circuit in and for Leon County, Florida, with respect to any proceedings related to the enforcement of the Order, including any proceeding related to contempt of Court.

I declare under penalty of perjury that the foregoing is true and correct and that this undertaking is executed this _____ day of _____, 200____.

Signature: _____

Address:

Phone:

Facsimile:

E-mail:

Employer/Business:

Job Title/Description:

Tab 12

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative
in Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs.

CASE NO. 2006 CA 002973

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, et al.,

Defendants.

ELLEN FEDDER, et al.,

Plaintiffs,

vs.

CASE NO. 2006 CA 002996
(Consolidated)

TOM GALLAGHER, et al.,

Defendants.

**DEFENDANT DENT'S RESPONSE TO PLAINTIFF'S
REQUEST FOR PRODUCTION OF DOCUMENTS AND FOR
INSPECTION OF TANGIBLE THINGS**

COMES NOW, by and through undersigned counsel, Kathy Dent
as Supervisor of Elections in Sarasota County, Florida, and
responds to the Plaintiff's Request for Production of Documents
and for Inspection of Tangible Things and with respect thereto,
states as follows:

1. The requested items have been previously produced to Plaintiff.

2. The specified items have been previously provided to the Plaintiff.

3. Copies of Sarasota County voting machines by serial number used in the November 2006 General Election will be provided to Plaintiffs.

4. Defendant does not maintain or have custody of the Election Systems and Software, Inc. (ES&S), source code.

5. See response to Paragraph 4.

6. See response to Paragraph 4.

7. Defendant objects to production of the documents specified in Paragraph 7, as such are proprietary, trade secret matters and pursuant to § 90.506, F.S., and the contract between Sarasota County and Election Systems & Software, Inc., the release of these items would breach their agreement and the proprietary protected nature of the items. Such items may not be released without the written consent of ES&S or proper court order.

8. Defendant objects to production of the documents specified in Paragraph 8, as such are proprietary trade secret matters and pursuant to § 90.506, F.S., and the contract between Sarasota County and Election Systems & Software, Inc., the release of these items would breach their agreement and the

proprietary protected nature of the items. Such items may not be released without the written consent of ES&S or proper court order.

9. Defendant objects to production of the documents specified in Paragraph 9, as such are proprietary matters and pursuant to § 90.506, F.S., and the contract between Sarasota County and Election Systems & Software, Inc., the release of these items would breach their agreement and the proprietary protected nature of the items. Such items may not be released without the written consent of ES&S or proper court order.

10. The documents requested herein are in the custody and control of Defendant Secretary of State of Florida.

11. Digital copies of the ballot-style files will be produced.

12. Defendant objects to production of the documents specified in Paragraph 12, as such are proprietary trade secret matters and pursuant to § 90.506, F.S., and the contract between Sarasota County and Election Systems & Software, Inc. Release of these items would breach the agreement and the proprietary protective nature of the items. Such items may not be released without the written consent of ES&S or proper court order.

13. This Defendant objects to the production and Plaintiff's "temporary" access to iVotronics owned by Sarasota County, Florida, as requested. Pursuant to Section 104.30,

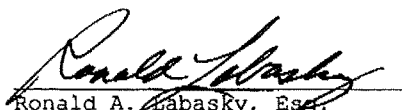
Florida Statutes, release of voting machines would be improper. In addition, such contain the ballots in the election and are precluded from release. Further, the release of the voting machines would violate the contract between Election Systems & Software, Inc. and Defendant as such are considered confidential, proprietary and trade secrets of ES&S and may not be released without the consent of ES&S or proper court order.

Providing the machines for any type of access, opening or inspection, will violate the warranty between Sarasota County and Election Systems & Software, Inc. Based upon the foregoing, any release of these items is required by court order. Such court order should specify that parties receiving the items purchase the equipment, as such will be compromised by any actions by Plaintiff and are then unable to be used again by Sarasota County.

14. Objection, see Paragraph 13.

15. This Defendant does not possess the ES&S source code or other items requested herein, which are in the custody and control of Election Systems & Software, Inc. and the Florida Department of State.

Respectfully submitted this 5th day of December, 2006.


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Tab 13

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
From the State of Florida's Thirteenth Congressional
District, *Plaintiff*,

v.

Case No.: 2006 CA 2973

**ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA**, *et al.*, *Defendants*.

ELLEN FEDDER, *et al.*, *Plaintiffs*,

v.

Case No. 2006 CA 2996
(consolidated)

**FLORIDA ELECTIONS CANVASSING
COMMISSION**, *et al.*, *Defendants*.

**STATE DEFENDANTS' RESPONSE TO PLAINTIFF JENNINGS'
REQUEST FOR PRODUCTION OF DOCUMENTS AND
FOR INSPECTION OF TANGIBLE THINGS**

Defendants Elections Canvassing Commission of the State of Florida, Sue M Cobb, as Secretary of State of the State of Florida, and Dawn K. Roberts, as Director of the Division of Elections of the State of Florida, (collectively, the "State Defendants") respond to the Plaintiff Christine Jennings' Request for Production of Documents and for Inspection of Tangible Things (the "Discovery Requests") as follows:

GENERAL OBJECTIONS

1. The State Defendants object to the Discovery Requests to the extent they seek information that was prepared for or in anticipation of litigation, that constitutes work product, that is protected by the attorney-client privilege, or that is otherwise privileged or protected against discovery.

2. The State Defendants object to providing information called for by the Discovery Requests that is publicly available or that is already or should be in the possession, custody, or control of Plaintiff or that was provided or will be provided to the Plaintiff by other Defendants.

3. The State Defendants object to the Discovery Requests to the extent they purport to require the State Defendants to provide information not presently in their possession, custody, or control, or to make unreasonable inquiries of persons or other entities.

4. The State Defendants object to the Discovery Requests to the extent that they are vague, overly broad, unduly burdensome, harassing, and/or not reasonably calculated to lead to the discovery of relevant or admissible evidence.

5. The State Defendants' responses to the Discovery Requests are hereby made without in any way waiving or intending to waive, and the State Defendants expressly preserve:

- (A) all objections they may have as to the competence, relevance, materiality, and admissibility as evidence for any purpose of the information to be produced, or the subject matters thereof;
- (B) the right to object on any ground to the use of the information in any aspect of this or any other court action or judicial or administrative proceeding or investigation;
- (C) all applicable privileges, exemptions, and protections from discovery; and

(D) the right at any time to supplement their responses to the Discovery Requests.

6. The State Defendants object to the Discovery Requests to the extent that they seek documentation which is confidential and exempt trade secret (defined by § 812.081) under §§ 815.04 and 815.045, Florida Statutes (2006). In anticipation of this asserted objection, Plaintiffs have moved to compel production of such trade secret-privileged documentation. The State Defendants will not produce such documentation unless and until ordered by the Court.

RESPONSE TO REQUEST FOR PRODUCTION OF DOCUMENTS

Subject to the objections below and the general objections, the State Defendants will produce the requested documents as detailed below.

RFP NO. 1:

All "event logs" (or "audit logs") in digital form (on a recordable compact disc) as produced by the Unity software suite, covering every voter who voted or attempted to vote on an iVotronic voting machine used in early voting or in Election Day voting in Sarasota County in the November 2006 general election.

RESPONSE TO RFP NO. 1:

The State Defendants will deliver by December 6, 2006, a compact disc containing the Sarasota County "event logs" that are in their possession.

RFP NO. 2:

All "ballot-image logs" (or "ballot-image summaries") in digital form (on a recordable compact disc) as produced by the Unity software suite, covering every voter who voted or attempted to vote on an iVotronic voting machine used in early voting or in Election Day voting in Sarasota County in the November 2006 general election

RESPONSE TO RFP NO. 2:

The State Defendants will deliver by December 6, 2006, a compact disc containing the Sarasota County "ballot-image logs" that are in their possession.

RFP NO. 3:

All documents pertaining to a list of the machines, by serial number, that were used in each precinct and each early-voting station during the November 2006 general election.

RESPONSE TO RFP NO. 3:

The State Defendants object to this request as vague. The State Defendants object to this request as overbroad to the extent it seeks documents not related to Sarasota County. Subject to these objections, the State Defendants will deliver by December 6, 2006, a list of the machines that were used in Sarasota County during the November 2006 election in their possession.

RFP NO. 4:

All documents pertaining to the Electronics Systems & Software, Inc. (ES&S) source code to the iVotronic system as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a).

RESPONSE TO RFP NO. 4:

The State Defendants object to this request as vague and overbroad and confidential and exempt trade secret (defined by § 812.081) under §§ 815.04 and 815.045, Florida Statutes (2006). Furthermore, subject to the Court's November 21 Order, Plaintiff's requests for production of Source Code materials were denied without prejudice. The State Defendants will not produce documents in response to RFP No. 4 until further order of the Court.

RFP NO. 5:

All documents pertaining to the ES&S source code to all elements of the Unity software suite as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a).

RESPONSE TO RFP NO. 5:

The State Defendants object to this request as vague and overbroad and confidential and exempt trade secret (defined by § 812.081) under §§ 815.04 and 815.045, Florida Statutes (2006). Furthermore, subject to the Court's November 21 Order, Plaintiff's requests for production of Source Code materials were denied without prejudice. The State Defendants will not produce documents in response to RFP No. 5 until further order of the Court.

RFP NO. 6:

All documents pertaining to the ES&S source code to the personal electronic ballots (PEBs) as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a).

RESPONSE TO RFP NO. 6:

The State Defendants object to this request as vague and overbroad and confidential and exempt trade secret (defined by § 812.081) under §§ 815.04 and 815.045, Florida Statutes (2006). Furthermore, subject to the Court's November 21 Order, Plaintiff's requests for production of Source Code materials were denied without prejudice. The State Defendants will not produce documents in response to RFP No. 6 until further order of the Court.

RFP NO. 7:

All documents pertaining to the development tools, scripts, "makefiles," and other software as used in the November 2006 general election in Sarasota County to compile, debug, and test the iVotronic system, the PEBs, and the elements of the Unity software suite.

RESPONSE TO RFP NO. 7:

The State Defendants object to this request as vague and confidential and exempt trade secret (defined by § 812.081) under §§ 815.04 and 815.045, Florida Statutes (2006). Furthermore, the State Defendants do not have any such documents in their possession.

RFP NO. 8:

All user manuals, operator manuals, training materials, and other documentation related to the use, operation, or maintenance of any part of the iVotronic system, the Unity software suite or any of its elements, or the PEBs.

RESPONSE TO RFP NO. 8:

The State Defendants object to this request as vague and overbroad. Additionally, the State Defendants object on the basis that certain portions of the requested documentation in the possession of the State Defendants are confidential and exempt trade secret (defined by § 812.081) under §§ 815.04 and 815.045, Florida Statutes (2006). The State Defendants suggest that the non-trade secret portions of the requested documentation are publicly available or should be in the possession, custody, or control of Plaintiff or will be provided to the Plaintiff by other Defendants. Notwithstanding this, and subject to the above-mentioned objections, the State Defendants will produce for inspection at a mutually agreeable place and time, only those portions of the user manuals, operator manuals, training materials, and other documentation related to the use, operation, and maintenance of the iVotronic systems, the Unity software, or the PEBs which are not trade secret- privileged.

RFP NO. 9:

All documentation necessary to extract and read the "three redundant memories" contained within the iVotronic machines.

RESPONSE TO RFP NO. 9:

The State Defendants object to this request as vague and confidential and exempt trade secret (defined by § 812.081) under §§ 815.04 and 815.045, Florida Statutes (2006). Furthermore, the State Defendants do not have any such documents in their possession.

RFP NO. 10:

All documents pertaining to election-definition files and other necessary data (including passwords) to configure an iVotronic for each of the nine ballot styles used in Sarasota County in the November 2006 general election.

RESPONSE TO RFP NO. 10:

The State Defendants object to this request as vague and confidential and exempt trade secret (defined by § 812.081) under §§ 815.04 and 815.045, Florida Statutes (2006). Furthermore, the State Defendants do not have any such documents in their possession.

RFP NO. 11:

All digital copies of the ballot-style files for all nine ballot styles.

RESPONSE TO RFP NO. 11:

The State Defendants will deliver by December 6, 2006, a compact disc containing .pdf versions of the requested documentation.

RFP NO. 12:

All files loaded onto an iVotronic machine as part of the "ballot programming" process, either for early voting or for Election Day voting.

RESPONSE TO RFP NO. 12:

The State Defendants object to this request as confidential and exempt trade secret (defined by § 812.081) under §§ 815.04 and 815.045, Florida Statutes (2006). Furthermore, the State Defendants do not have any such documents in their possession.

RESPONSE TO REQUEST FOR INSPECTION OF TANGIBLE THINGS

REQUEST FOR INSPECTION NO. 13:

Plaintiff hereby requests temporary access to eight iVotronic machines that generated particularly high undervote rates in the recent congressional election in Sarasota County, including at least one machine used on Election Day in each of six specified precincts (Precincts 31, 44, 74, 105, 117, and 118) and at least one high-undervote machine used in early voting; the carrying cases for those iVotronic machines; power adaptors, and other apparatus to set up the voting booths; two supervisor personalized electronic ballots ("PEBs"); nine regular PEBs (one configured for each ballot style used in Sarasota County in the recent election); a standard ES&S "Communications Pack" (containing a thermal printer and all the necessary cabling); and one PEB reader for transferring data from a PEB to a standard personal computer.

RESPONSE TO REQUEST FOR INSPECTION NO. 13:

No such machines are in the possession of the State Defendants.

REQUEST FOR INSPECTION NO. 14:

Plaintiff hereby requests permission to physically open and inspect the internal components of one iVotronic machine and one PEB.

RESPONSE TO REQUEST FOR INSPECTION NO. 14:

No such machines are in the possession of the State Defendants.

REQUEST FOR INSPECTION NO. 15:

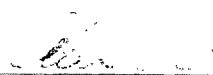
Plaintiff hereby requests a full copy of all ES&S source code to the iVotronic system as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a); a full copy of all ES&S source code to all elements of the Unity software suite as used in the recent election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a); and a full copy of all ES&S source code to the PEBs as used in the recent election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a).

RESPONSE TO REQUEST FOR INSPECTION NO. 15:

The State Defendants object to this request as vague and overbroad and confidential and exempt trade secret (defined by § 812.081) under §§ 815.04 and

§15.045, Florida Statutes (2006). Furthermore, subject to the Court's November 21 Order, Plaintiff's requests for production of Source Code materials were denied without prejudice. The State Defendants will not produce documents in response to RFP No. 15 until further order of the Court.

Respectfully submitted this 5th day of December 2006.



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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by Facsimile or Electronic Transmission this 5th day of December, 2006, to the following:

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Tab 14

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

CASE NO. 2006-CA-2973

Consolidated with Case No. 2006-CA-2996

vs.

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher and State Senator Daniel Webster,
et al.,

Defendants.

FILED
CIRCUIT CIVIL DIV.
06 DEC -6 PM 4:28
CLARK COUNTY, FLORIDA

**DEFENDANT ELECTION SYSTEMS & SOFTWARE, INC.'s MOTION
REQUESTING FIFTEEN (15) DAYS TO RESPOND TO PLAINTIFF'S REQUEST FOR
PRODUCTION, MOTION TO COMPEL PRODUCTION AND MOTION FOR
ENTRY OF PROTECTIVE ORDER AND REQUEST FOR EVIDENTIARY HEARING**

The Defendant Election Systems & Software, Inc. ("ESS") files this motion requesting fifteen (15) days, until and including December 21, 2006, to respond to (i) those specific requests within Plaintiff's Request for Production of Documents and for Inspection of Tangible Things that request the production of the iVotronic voting machines, personalized electronic ballots, communications pack, the PEB reader, the source code to the iVotronic system, the source code to all elements of the Unity software suite, and the source code to the personalized electronic ballots (collectively, the "Source Code and Proprietary Equipment"), (ii) Plaintiff Jennings' Motion to Compel Production of Items Within the Custody and Control of the State ("Motion to Compel") and (iii) Plaintiff Jennings' Motion for Entry of a Protective Order ("Motion for Protective Order"). Further, ESS requests the Court to strike plaintiff's Notice of Hearing for

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December 15, 2006, and instead, set a full day evidentiary hearing on the Motion to Compel and Motion for Protective Order on the first available date after December 21, 2006, so that the ESS will have adequate time to present testimony and other evidence to the Court bearing on the issue of whether the Court should order the production of ESS' Source Code and Proprietary Equipment. ESS supports this motion with the following information.

BACKGROUND

1. Plaintiff filed the initial complaint in this case on November 20, 2006, alleging that a malfunction in the electronic voting machines used in Sarasota County resulted in an "undervote." The initial complaint named several public entities and officials as defendants, but did not name ESS as a party.
2. On November 20, 2006, plaintiff also filed a Request for Production directed to the public defendants. Among other things, the Request for Production sought discovery of the Source Code and Proprietary Equipment relating to the electronic voting machines. In a Motion to Compel Expedited Discovery that accompanied this request, plaintiff demanded that the public defendants provide the Source Code and Proprietary Equipment, as well as the other discovery requested, by November 22, 2006.
3. Although ESS is the owner of the Source Code and Proprietary Equipment, plaintiff did not serve the Request for Production on ESS or otherwise give ESS notice that it was seeking discovery of its Source Code and Proprietary Equipment.
4. On November 21, 2006, the Court conducted a hearing on plaintiff's Motion to Compel Expedited Discovery. At the conclusion of that hearing, the Court denied plaintiff's motion for a near-immediate discovery response and ruled that defendants may have fifteen (15) days to respond to the Request for Production. (See November 21, 2006 Hearing Transcript at

42, a copy of which is attached as exhibit "A") The public defendants' responses to the discovery requests are due on December 6, 2006. The Court further ordered plaintiff to give ESS notice so that ESS would have an opportunity to be heard with respect to plaintiff's request for the Source Code and Proprietary Equipment. (Exhibit A at 42-44)

5. Notwithstanding the Court's directive to give ESS notice that it was seeking to obtain ESS' Source Code and Proprietary Equipment, plaintiff did nothing for nine days.

6. On November 30, 2006, plaintiff filed a First Amended Complaint to Contest Election which named ESS as a defendant. However, ESS was not served with the First Amended Complaint until December 4, 2006. ESS' response to the First Amended Complaint is not due until December 14, 2006.

7. Also on November 30, 2006, the plaintiff filed two additional discovery motions relating to the ESS Source Code and Proprietary Equipment: the Motion to Compel and the Motion for Entry of a Protective Order. Notably, plaintiff did not serve ESS with either motion despite plaintiff's recent designation of ESS as a party in the amended complaint.

8. Despite the lack of notice from plaintiff, ESS was advised of the amended complaint and plaintiff's pending discovery requests through another defendant on December 1, 2006. As a result, in order to avoid any further delay in the proceeding, ESS contacted plaintiff's counsel on December 4, 2006, to accept service of the amended complaint. The amended complaint was also served on that same date.

9. On December 5, 2006, without discussing the matter with counsel for ESS, plaintiff unilaterally set the Motion to Compel and Motion for Protective Order for hearing on December 15, 2006, reserving three (3) hours for the hearing. Also on December 5, 2006,

Counsel for plaintiff advised by e-mail that the three (3) hour hearing time would also be utilized for hearings on pending motions to dismiss and to conduct a scheduling conference.

ARGUMENT

I. THE CIRCUMSTANCES WARRANT AFFORDING ESS AT LEAST FIFTEEN (15) DAYS TO RESPOND TO PLAINTIFF'S DEMAND FOR ESS' SOURCE CODE AND PROPRIETARY EQUIPMENT

Given the Court's invitation to ESS to be heard and the fact that ESS has now been named a defendant in the suit, ESS intends to submit, as soon as reasonably possible, a legal memorandum in response to plaintiff's request for disclosure of ESS' Source Code and Proprietary Equipment. However, under the circumstances here, the Court should grant ESS at least fifteen (15) days (up to and including December 21, 2006) in which to submit its response.

First, the 15-day response period would be consistent with the 15-day response period the Court allowed the other defendants in responding to plaintiff's Request for Production.

Second, given the complexity of the subject matter, ESS would be unable to prepare an adequate response in a shorter period of time, which would severely prejudice ESS given the critical importance of this trade secret information to ESS' business. Notably, plaintiff has submitted lengthy affidavits from purported experts in support of her amended complaint which, among other things, speak to whether an examination of ESS' Source Code and Proprietary Equipment is necessary to answer the question of why there was a higher level of undervotes than anticipated in Sarasota County. Due process and fundamental fairness dictate that ESS be given adequate time of at least fifteen (15) days in which to retain its own experts who can assist ESS in responding to the plaintiff's factual assertions regarding the alleged need for the Source Code and Proprietary Equipment. Having the benefit of ESS' experts, not just plaintiff's experts, is critical to the Court in a case such as this where the subject matter of the trade secret is highly

technical and one in which the Court is unlikely to be familiar. *See Beck v. Dumas*, 709 So. 2d 601, 603 (Fla. 4th DCA 1998); *Premiere Lab Supply Inc. v. Chemplex Industries, Inc.*, 791 So. 2d 1190 (Fla. 4th DCA 2001).

Third, plaintiff would not be prejudiced by allowing ESS fifteen (15) days to respond, and, to the extent there is any prejudice, it would be the result of the plaintiff's own delay in complying with the Court's directive to give ESS notice. Although plaintiff has been seeking production of ESS' Source Code and Proprietary Equipment since November 20, 2006, plaintiff's effort has been directed at the State of Florida and not ESS. However, on November 21, 2006, this Court directed the plaintiff to give ESS notice that it was attempting to procure the Source Code and Proprietary Equipment so that ESS, as the owner thereof, could be heard and have an opportunity to defend its trade secret. Despite this, the plaintiff gave ESS no notice until December 4, 2006, thirteen (13) days later, when plaintiff served ESS with its amended complaint. Plaintiff's failure to act promptly only confirms that this discovery is not needed on an immediate or emergency basis and that plaintiff will not be prejudiced by the relief requested in this motion.

In her Motion to Compel, plaintiff argues that the State of Florida should be required to produce the Source Code and Proprietary Equipment without hearing from ESS and further that the State of Florida may not assert the trade secret status of the Source Code and Proprietary Equipment on behalf of ESS. However, under Florida law, ESS has a due process right to be heard and has standing to prevent the State of Florida from disclosing its trade secrets, and the Court has numerous mechanisms through which it can protect ESS' privileged information. For example, Section 90.506, Florida Statutes, provides that a witness may refuse to disclose and prevent others from disclosing a trade secret. Florida Rule of Civil Procedure 1.280(c) also

empowers a court to order that trade secret or other confidential commercial information not be disclosed or be disclosed only in a designated way. Similarly, Florida Rule of Judicial Administration 2.051(c)(9)(A)(ii) and (vi) specifically exempts from public disclosure “[a]ny court record determined to be confidential . . . on the grounds that confidentiality is required to . . . protect trade secrets” or “avoid substantial injury to a party by disclosure of matters protected by common law or privacy right not generally inherent in the specific type of proceeding sought to be closed.” The Florida Supreme Court has recognized that this rule allows a trial court to exempt from public access records determined to be confidential. *See State v. Buenoano*, 707 So.2d 714, 716 n. 5 (Fla. 1998).¹ Based on the foregoing authority, trade secrets and confidential commercial information can be protected from public access by a court ordering that the information not be disclosed.

II. ESS IS ENTITLED TO A FULL DAY EVIDENTIARY HEARING ON THE DISCOVERABILITY OF ITS SOURCE CODE AND PROPRIETARY EQUIPMENT, WHICH SHOULD BE SET ON THE FIRST AVAILABLE HEARING DATE AFTER DECEMBER 21, 2006

Clearly, an evidentiary hearing is required on the issue of whether plaintiff is entitled to ESS’ Source Code and Proprietary Equipment. Plaintiff has admitted that the Source Code and Proprietary Equipment she seeks are trade secrets.² Because the Source Code and Proprietary

¹ Rule 2.051 was adopted in October 1992 in response to the then proposed Article I section 24 amendment to the Florida Constitution regarding access to public records. *See In re Amendment to Florida Rules of Judicial Administration-Public Access to Judicial Records*, 608 So. 2d 472 (Fla. 1992). Article I section 24 was added to the Florida Constitution just one month later by ballot initiative, and explicitly provides that “rules of court that are in effect on the date of the adoption of this section shall remain in effect until they are repealed.” Fla. Const. Art. I, §24. Accordingly, the constitutional provision for disclosure of public records is not violated by pre-existing court rules providing for protection of trade secrets and privacy issues.

² For purposes of her Motion for Protective Order, plaintiff conceded that the ESS Source Code and Proprietary Equipment are trade secrets, but argued that compelling discovery of those trade secrets would not result in any harm to ESS.

Equipment are admittedly trade secrets, the Court must require plaintiff to show reasonable necessity for the requested materials. *See Uniroyal Goodrich Tire Company v. Eddings*, 673 So.2d 131 (Fla. 4th DCA 1996). Plaintiff's Motion to Compel does not demonstrate reasonable necessity and this Court cannot simply rely on the argument of plaintiff's counsel given the highly technical nature of the Source Code and Proprietary Equipment, which can only be adequately explained through expert testimony. Under these circumstances, in order to make an informed decision and findings on the issue of the reasonable necessity for disclosure of the Source Code and Proprietary Equipment, the Court will be required to conduct an evidentiary hearing that must include expert testimony. *See Beck v. Dumas*, 709 So. 2d 601, 603 (Fla. 4th DCA 1998) (court departed from essential requirements of law by deciding trade secret claim relating to computer source code in a vacuum; in order to properly weigh competing interests, court was required to inform itself by conducting an evidentiary hearing); *Premiere Lab Supply, Inc., v. Chemplex Industries, Inc.*, 791 So.2d 1190 (Fla. 4th DCA 2001)(court departed from essential requirements of law in ordering production of a customer list without first conducting an *in camera* inspection to determine whether it constituted a trade secret and a subsequent evidentiary hearing on the issue of reasonable necessity of disclosure.). Notably, a court cannot abrogate the need for an evidentiary hearing or avoid making a finding of reasonable necessity based on the evidence by ordering production of a trade secret subject to the terms of a protective order. *See Rare Coin-It, Inc. v. L.J.E., Inc.*, 625 So.2d 1277 (Fla. 3rd DCA 1993)(Production of the source code, without a showing and finding of reasonable necessity, would cause Rare irreparable harm. This is true even when the trial court orders production subject to a protective order.)

The three (3) hour hearing on December 15, 2006 that plaintiff unilaterally scheduled on its Motion to Compel and Motion for Protective Order would clearly be inadequate and unfairly prejudicial to ESS. It would be fundamentally unfair to require ESS to prepare a legal memorandum in response to the motions, retain experts and prepare for an evidentiary hearing in only nine (9) days when plaintiff has had since November 21, 2006 to prepare for this hearing.³ Indeed, ESS is in the process of retaining an expert, who has indicated that he could not be prepared to address the assertions in plaintiff's affidavits by December 15, 2006.

Further, the three (3) hours allocated for the December 15 hearing fails to take into account that the hearing is evidentiary in nature and would be patently insufficient, particularly given the fact that the plaintiff intends to utilize the hearing for multiple purposes. In this regard, in addition to the Motion to Compel and Motion for Protective Order, plaintiff also intends to use the 3-hour hearing on pending motions to dismiss and to conduct a scheduling conference. It would be a deprivation of due process to limit the hearing to less than three (3) hours when, as shown herein, an evidentiary hearing is required and expert testimony and legal argument will be presented on the issues pertaining to the need to review ESS' Source Code and Proprietary Equipment. Accordingly, ESS requests that the Court schedule a full day evidentiary hearing, giving due regard for the holiday period and the difficulties for out-of-state witnesses arranging travel during that period, at the first available date on the Court's calendar after the 15-day period for ESS to file its response, *i.e.* the first available date after December 21, 2006.

Plaintiff cannot avoid the need for an evidentiary hearing or reasonably object to ESS' request for a hearing after December 21 by arguing that such a hearing would not be an

³ Since affidavits by purported experts were filed by plaintiff with the original complaint on November 20, 2006, it is clear that plaintiff has been preparing for a hearing to compel the production of ESS' Source Code since before the suit was filed.

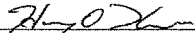
“immediate hearing” as required by Section 102.168, Florida Statutes (2006). The statute does not define within what time period a hearing must be held to be considered an immediate hearing and ESS has found no case law addressing what an immediate hearing is under that statute. However, like the Contest of Election Statute, the Public Records Act in Section 119.11, Florida Statutes (2006), provides for an “immediate hearing.” In construing this provision, the Courts have concluded an “immediate hearing” means one that is given priority over more routine matters, and it is sufficient if a good faith effort is made to accommodate the legislative desire that an immediate hearing be held. *See Salvador v. Fennelly*, 593 So.2d 1091 (Fla. 4th DCA 1992)(an immediate hearing means that a hearing should be scheduled much sooner than months after the action is initiated). ESS’ motion does not seek to delay a hearing for months; it only seeks to have fifteen (15) days to address a very important issue to ESS, *i.e.*, the production of its very valuable and extremely competitively sensitive trade secrets, and for this Court to schedule an evidentiary hearing thereafter as soon as time is available on the Court’s calendar. Alternatively, plaintiff has waived her right to an immediate hearing through her own delay in providing ESS notice as required by the Court.

BASED ON THE FOREGOING, ESS respectfully requests leave to file its response to Plaintiff’s Request for Production, Motion to Compel and Motion for Protective Order within fifteen (15) days of the date of this motion, that the Court strike the plaintiff’s unilaterally filed Notice of Hearing for December 15, 2006, and schedule a full day evidentiary hearing on the Motion to Compel and Motion for Protective Order on the first available date on the Court’s calendar after December 21, 2006.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been sent by Facsimile and U. S. Mail on this 6th day of December, 2006, to all counsel of record on the attached mailing list.

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IN THE CIRCUIT COURT OF THE
SECOND JUDICIAL CIRCUIT IN
AND FOR LEON COUNTY, FLORIDA.

CHRISTINE JENNINGS, nominee of
the Democratic Party for Representative
in Congress from the State of Florida's
Thirteenth Congressional District,

CASE NO. 2006 CA 2973

Plaintiff,

vs.

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher, and State Senator Daniel
Webster, et al.,

Defendants.

IN RE:

HEARING

BEFORE:

HONORABLE WILLIAM L. GARY
(Circuit Court Judge)

DATE:

Tuesday, November 21, 2006

TIME:

Commenced: 10:30 a.m.
Concluded: 11:15 a.m.

LOCATION:

Courtroom 2F
Leon County Courthouse
Tallahassee, Florida

REPORTED BY:

LIZ CLEARY, RPR
Notary Public in and for
State of Florida at Large

ASSOCIATED COURT REPORTERS

Post Office Box 306 * Tallahassee, Florida 32302
Phone (850) 222-5508 * Fax (850) 222-2428

Exhibit A

1 of the Supervisor of Elections. As far as any tests they
2 are going to conduct Tuesday, that is great, but I do want
3 the Supervisor to make available an opportunity for the
4 experts of either candidate, the Plaintiff or Mr. Buchanan,
5 to be there, observe. And I'm sure we will be addressing it
6 again, because whatever they do is going to be unacceptable
7 to somebody. But it may answer the question, too. I'm sure
8 hoping it will.

9 Your request for everything to take place by tomorrow
10 is totally out of order. I'm denying your motion to
11 expedite it, however I'm going to require the Defendants to
12 respond to discovery within 15 days.

13 As far as the source code, I'm denying your motion
14 without prejudice. I think ES&S needs an opportunity to be
15 heard. If they are heard, you may get that source code.
16 There is generally ways to get around the public becoming
17 aware what is in the source code. I'm aware of that, and
18 you all know it, too.

19 I think you ought to see if you can work something out
20 on the discovery, but I have a feeling within 15 days we're
21 going to have another hearing, just a wild guess. You do
22 respond to the complaint within ten days. I believe that is
23 the statute. And I believe 106 also rests venue here in
24 Leon County.

25 What have I missed?

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1 MR. COFFEY: Your Honor, you indicated that both -- I
2 want to be clear on one thing. You indicated that they are
3 going to respond in 15 days.

4 THE COURT: To the discovery request.

5 MR. COFFEY: And at that point the issue, for example,
6 if they object to making machines available, that will be
7 processed from there?

8 THE COURT: Absolutely. But I believe what they said
9 this morning was there is going to be tests conducted next
10 Tuesday and those machines will be made available to your
11 experts to observe the testing procedures. If it goes
12 beyond that, then I'm sure we're going to address it down
13 the road.

14 MR. COFFEY: But in terms of our own access to
15 conduct --

16 THE COURT: You have 15 days to respond.

17 MR. COFFEY: Okay. The other comment I had was with
18 respect to ES&S. Would it then be consistent with
19 Your Honor's wishes to schedule a hearing where they are
20 given notice so that we can address the source code issues?

21 THE COURT: I think they need to be given notice.
22 Actually, when my judicial assistant scheduled today's
23 hearing it was under the condition that everyone would not
24 only be noticed but served, and we only got halfway there.

25 MR. COFFEY: Some of the services may be accomplished

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1 this morning. Everybody got the papers at 1:00 yesterday.
2 ES&S is not a party to the lawsuit, so I assume that the
3 proper follow-up would be to contact your assistant, find a
4 time, and make sure ES&S gets plenty of notice.

5 THE COURT: Or you could serve them with a subpoena
6 duces tecum and see what they think, then we'll set a
7 hearing and have a hearing on that.

8 MR. COFFEY: Thank you, Your Honor.

9 THE COURT: You all have a good day.

10 MR. ANTONACCI: Thank you, Your Honor.

11 *(HEARING CONCLUDED AT 11:15 A.M.)*

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Tab 15

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District, *et. al.*

Plaintiff,

CASE NO. 2006-CA-2973
Consolidated with Case No. 2006-CA-2996

vs.

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher and State Senator Daniel Webster,
et al.,

Defendants.

DEFENDANT ELECTIONS SYSTEMS & SOFTWARE, INC. (ES&S) SUPPLEMENTAL
ARGUMENTS IN SUPPORT OF ITS MOTION REQUESTING 15 DAYS TO RESPOND
TO PLAINTIFF'S REQUEST FOR PRODUCTION, MOTION TO COMPEL
PRODUCTION AND MOTION FOR ENTRY OF PROTECTIVE ORDER AND
REQUEST FOR EVIDENTIARY HEARING

The Defendant Elections Systems & Software, Inc. (ES&S) hereby files this
supplemental pleading in support of the above-referenced Motion filed on December 6, 2006.

As additional support for the above-referenced Motion, ES&S respectfully states as follows:

**ES&S' Request For Extension Of Time Is Reasonable Since ES&S Was Served On
December 4, 2006 And Issues Raised In Plaintiff's Request For Production And Motion To
Compel Are Highly Significant And Complex.**

1. ES&S is mindful of the requirements of Section 102.168 Florida Statutes (2006)
which provides for expedited proceedings in an elections contest. However, ES&S respectfully
submits that this statutory right must be balanced against the competing statutory right that

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ES&S is afforded under Section 90-506 Florida Statutes (2006) and other provisions of law, to protect its trade secrets and proprietary software and equipment.

2. As noted by this Honorable Court in the November 21st Emergency Hearing to Compel Production, and as clearly set forth in the Florida Case Law cited in ES&S' Motion of December 6, 2006, ES&S is entitled to a full and fair opportunity to protect its trade secrets and proprietary technology.

3. ES&S was not served with the first Amended Complaint until December 4, 2006.¹

4. Florida courts have repeatedly held that basic principles of Due Process require that a party be given adequate notice and an opportunity to be heard before a fair and impartial Tribunal. See *Tibbets v. Olson*, 91 Fla. 824 (Fla. 1926); See also *Fiehe v. R.E. Householder Co.*, 98 Fla. 627 (Fla. 1929); *Rucker v. City of Ocala*, 684 So.2d 836 (Fla. 1st DCA 1996); *Chuck v. City of Homestead Police Department*, 888 So. 2d 736 (Fla. 3rd DCA 2004).

5. In these types of proceedings, Florida Courts have also held that in order to properly weigh competing interests in litigation seeking disclosure of trade secrets, the Court is required to inform itself by conducting an evidentiary hearing. See *Beck v. Dumas*, 709 So. 2d 601-603 (Fla. 4th DCA 1988); See also *Uniroyal Goodrich Tire Co. v. Eddings*, 673 So.2d 131 (Fla. 4th DCA 1996).

6. As part of its efforts to diligently prepare for Hearing on this matter, ES&S retained Professor Michael C. Herron, on December 6, 2006 (only two days after being served with the First Amendment Complaint) and is in the process of retaining additional experts.

¹ ES&S was advised of the Amended Complaint and given copies of the Motion to Compel Production and Motion for Protective Order on November 30, 2006 at 4:30 pm, via electronic transmission by Mark Herron, Esq., attorney for Jennings. In ES&S' Motion of December 6, 2006, it inadvertently and incorrectly noted that it had not been apprised of the Amended Complaint and not been furnished a copy of said Motion on November 30, 2006.

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7. These experts' participation is necessary to review the myriad of complex issues presented in this case, and the declarations of experts submitted by Plaintiffs in support of its Motion. Professor Herron is currently conducting analysis on the election in the 13th Congressional District. However, as stated in his attached Declaration, he is still in the process of incorporating certain data into his ongoing analysis of undervotes in November's election.

8. Professor Herron anticipates that his work will not be completed until at least December 15, 2006. After Professor Herron has completed his work, counsel for ES&S would need a reasonable amount of time to prepare its presentation, incorporating the analysis done by Professor Herron and other experts.

9. Therefore, ES&S respectfully submits that the requested period of time, to wit, 15 days to prepare for Hearing and file appropriate memoranda and other supporting information, is eminently reasonable in light of the complexity of this case, and the significant interests involved in this matter.

ES&S' Requests that the Court Deny Plaintiff's Request For Hearing On Request For Production And Motion To Compel On December 15, 2006 And Set A Reasonable Time To Conduct An Evidentiary Hearing.

10. Plaintiff has informed undersigned counsel that it will seek to have its Request for Production and Motion to Compel heard on December 15, 2006, for which they have reserved a three (3) hours time period. However, in this three (3) hour block of time, Plaintiffs also seek to have several other motions heard and conduct a case management conference.² Therefore, it is reasonable to expect that less than half that time will be available to conduct a full evidentiary hearing on the Requests for Production, Motions to Compel, and Proposed Protective Order.

² To date, Plaintiff has issued a Notice of Hearing on two (2) Motions to Dismiss for December 15, 2006. Plaintiff's counsel has also issued a Joint Notice setting a December 15, 2006 Case Management Conference and Requesting Entry of a Scheduling Order.

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11. Undersigned Counsel has conferred with Professor Herron regarding the time necessary to fully present his findings and conclusions and that of other experts that may be called by ES&S. As set forth in his attached Declaration, Professor Herron attests to the fact that even a full three (3) hour time period would be insufficient to fully present ES&S' case in opposition to the Motion to Compel and Request for Production.

12. As the Court knows, a party seeking production of trade secrets and proprietary information must first establish that there is a "reasonable necessity" for the request of the materials to compel its production. See *Rare Coin-It Inc. v. I.J.E. Inc.*, 625 So. 2d 1277 (Fla. 3rd DCA 1993). Therefore, in a full and fair evidentiary hearing it is anticipated that plaintiff would first have to produce evidence, subject to cross-examination, to meet this burden.

13. Defendant ES&S would then have the opportunity to also present evidence which demonstrates that there is no "reasonable necessity" to produce the requested materials.

14. As part of this evidentiary showing, ES&S intends to present voluminous documents related to the conduct of the election in Congressional District 13 as well as other District and State offices, including results of the parallel test conducted by the Florida Department of State on November 28th, 2006 and the second parallel test which occurred on Friday December 1st, 2006 and was conducted on machines used in the November election.³

15. Defendant ES&S would then seek to present expert reports, analysis and testimony to demonstrate that the unusual percentage of undervotes in the congressional District 13 race is not due to a "machine malfunction" as averred by the plaintiffs, but instead due to other causes not related to the proper function of the machines and software.

³ Secretary Cobb issued a press release on November 30th which states that "No anomalies were discovered in the machines; they functioned exactly as designed" in the first test conducted on November 29, 2006.

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16. Undersigned counsel respectfully submits that less than three (3) hours of hearing time to make the evidentiary presentation briefly summarized above, with the participation of numerous attorneys in this case that would be entitled to present additional evidence and cross-examine witnesses, would not provide an adequate due process opportunity to inform the Court on the myriad of issues set forth in the Request for Production and Motions to Compel.

WHEREFORE, ES&S respectfully requests that the Honorable Court grant its Motion seeking fifteen (15) days to file written responses to the Motion to Compel and Request for Production, that the Court strike Plaintiff's Notice of Hearing for December 15, 2006, only as to the portion which seeks Hearing on Plaintiff's Request for Production, Motion to Compel and Motion for Protective Order, and that the Court schedule a full day Evidentiary Hearing on said Motions on the first available date on the Court's calendar after December 21, 2006.

Respectfully Submitted,

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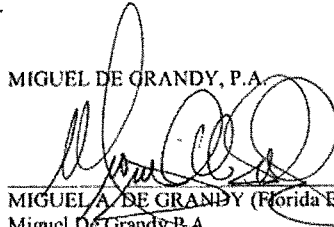
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Certificate of Service

I HEREBY CERTIFY that a true and correct copy of the foregoing was delivered by
facsimile or electronic transmission on the 7th day of DECEMBER, 2006, to all
counsel on the attached Mailing List.

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Declaration of Michael C. Herron

December 6, 2006

I, MICHAEL C. HERRON, declare as follows:

1. I have been retained as an expert by legal counsel to comment on patterns in undervotes (i.e., ballots that do not contain valid votes) cast in the 13th Congressional District race in Florida in the 2006 midterm elections. In particular, I have been asked to consider whether the undervotes cast in Sarasota County in this Congressional race are consistent with the particular ballot format used there.
2. Section 1 summarizes my qualifications to comment on undervotes in the 13th Congressional District race, and Section 2 explains why the currently proposed time constraints will greatly hamper my ability to do so.

1 Qualifications

- 1 I am currently Associate Professor of Government at Dartmouth College. At present I am also Visiting Associate Professor of Political Economy at the Wallis Institute of Political Economy, University of Rochester. I have previously been on the faculty of Northwestern University, and I held a Post-Doctoral Fellowship at Harvard University during the 2000-2001 academic year.

I

-
2. At Dartmouth College I teach classes in statistical methods to undergraduates students, and when at Northwestern University I taught similar material to undergraduates and graduate students.
 3. I have published articles in many leading academic journals, and my research on ballots, uncounted votes, and voting technology appears in *American Political Science Review*, *Electoral Studies*, *Journal of Politics*, and *Quarterly Journal of Political Science* (forthcoming).
 4. I am a co-author of an unpublished working paper on the 13th Congressional District undervote, and I have been actively studying the voting situation in this district for three weeks.
 5. I have a B.S. in Mathematics and Economics from Carnegie Mellon University, an M.A. in Political Science from the University of Dayton, an M.S. in Statistics from Stanford University, and a Ph.D. in Business from Stanford University.

2 Details

1. Pursuant to the 13th Congressional District undervote, I was retained by legal counsel on December 6, 2006. My retention followed a phone conversation with legal counsel's client in the afternoon of December 5, 2006.
2. I have been retained by legal counsel along with one of my colleagues, Jeffrey B. Lewis of the University of California, Los Angeles, to analyze patterns in what are called undervotes. An undervote occurs when a ballot cast in an election does not contain a valid vote in a given race.
3. The recent 13th Congressional District race in Florida (hereinafter, CD 13) had what all observers consider a very high undervote rate, approximately 8.2%. There was significant variance in the CD 13 undervote

rate among the five Florida counties that contribute to CD 13. In Sarasota County there were 142,532 total ballots cast in the 2006 midterm elections, and these ballots contained 58,632 valid votes for Republican candidate Vern Buchanan and 65,487 for Democrat Christine Jennings. Thus, the Sarasota County undervote rate in CD 13 was approximately 12.9%.¹

4. In contrast, in the part of Charlotte County that intersects CD 13 there were 4,460 votes for Buchanan, 4,277 for Jennings, and 255 undervotes. This translates to an undervote rate of approximately 2.8%. Finally, in Manatee County the CD 13 undervote rate was approximately 3.8%, in Hardee it was approximately 5.3%, and in DeSoto County it was approximately 2.1%.² Put simply, the Sarasota County undervote rate in CD 13 appears unusually large.
5. Of the five counties that contribute to CD 13, two of them (Charlotte and Sarasota) used iVotronic touchscreen voting machines, manufactured by Election Systems & Software, Inc, for early and election day voting. The other three counties (DeSoto, Hardee, and Manatee) used what are called "optical scan" voting technology for early and election day voting. All five CD 13 counties used optical scan voting technology for absentee voting.
6. My ability to testify fully about the nature and possible sources of the CD 13 undervote in Sarasota County depends on having access to complete voting records from all iVotronic counties in Florida. A complete voting record for a given county consists of, one, a report

¹Sarasota County figures were downloaded from <http://www.srqelections.com/results/gen2006sum.htm> on December 6, 2006.

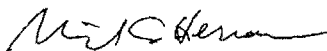
²Charlotte County data were downloaded from <http://www.charlottevotes.com/Elections/Reports/Gen06Summary.NTX> on December 6, 2006; Manatee data are from <http://www.votermanatee.com/results.asp?dateID=65&ElectionID=28>, and DeSoto and Hardee data are from the Florida Division of Elections.

that describes undervote rates by race for all election day, early, and absentee voters in said county, and, two, ballot-level logs that describe vote choices made by all early and election day voters in said county.

7. The necessity for complete voting records from all Florida iVotronic counties reflects the fact that there was variance across these counties in the way that races contested in the 2006 midterm election were displayed to voters, i.e., there was variance in the ballot formats used by Florida iVotronic counties in November, 2006. Because Sarasota County's ballot format shares features with the ballot formats used elsewhere in Florida, any study of Sarasota County and its undervote rate in the CD 13 race would be incomplete without comparing Sarasota County to other Florida iVotronic counties.
8. At present I lack complete voting records for the following Florida iVotronic counties: Broward, Martin, Miami-Dade, and Sumter. I am not sure when this situation will be ameliorated, but I have reason to believe that Martin and Sumter voting records may be available to me shortly.
9. Many Supervisors of Elections offices have provided me with voting data, in some cases complete voting records as described above. However, some of the data now in my possession was provided to me only very recently. For example, although I have complete voting records from Lake and Nassau Counties, two iVotronic counties of interest, I have not yet had time to incorporate data from these counties into my analysis of undervotes.
10. I anticipate being able to incorporate into my undervote analysis all the voting records that I have by the end of next week, i.e., by December 15, 2006. Analyzing new data and simultaneously writing an affidavit that incorporates the data is not consistent with high quality research.

-
11. My ability to assist legal counsel in understanding the statistical properties of the CD 13 undervote and the statistical properties of undervotes rate in other Ivotronic Counties in Florida will be greatly hampered if this assistance has to be rendered very quickly and in conjunction with my analyzing newly available voting data.
12. Legal counsel has informed me that, at a proposed hearing on December 15, 2006, counsel will have at most three hours to present information about undervote rates in CD 13 and among other Florida counties. In my judgment, explaining the CD 13 undervote rate with precision and answering questions pursuant to this explanation will almost certainly take more than three hours.

I declare under the penalty of perjury that the foregoing is true and correct and if called upon to do so I could and would competently so testify.



Michael C. Herron

Tab 16

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,
Plaintiff,

Case No.: 2006 CA 2973

vs.

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA; SARASOTA COUNTY
CANVASSING BOARD; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; VERN BUCHANAN, as
nominee of the Republican Party for Representative in
Congress from the State of Florida's Thirteenth
Congressional District; and ELECTION SYSTEMS
& SOFTWARE, INC.,
Defendants.

ELLEN FEDDER, LANCE JONES,
ERNEST LASCHE a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, CHARLES CLIFTON,
Plaintiffs,

Case No.: 2006 CA 2996

vs.

TOM GALLAGHER, CHIEF
FINANCIAL OFFICER, *et al.*
Defendants.

**PLAINTIFF JENNINGS' MOTION TO COMPEL PRODUCTION OF ITEMS WITHIN
THE CUSTODY AND CONTROL OF THE SARASOTA COUNTY DEFENDANTS**

Pursuant to Florida Rule of Civil Procedure 1.380(a)(2), Plaintiff Christine Jennings hereby moves to compel the Sarasota County Supervisor of Elections to produce or allow inspection of certain iVotronic voting-system equipment. Plaintiff submits that the Supervisor's objections to the discovery she requested in her Request for Production of November 20, 2006 (attached hereto as Exhibit A) are unfounded.

- Any objection based on Section 104.30, Florida Statutes, is baseless, as that statute clearly does not apply to court-ordered discovery.
- Plaintiff is prepared to purchase from the Supervisor any voting machines that will be physically opened for inspection of their internal components, and is prepared to post a bond to alleviate any concerns Supervisor Dent may have about Plaintiff's testing of other equipment.
- Supervisor Dent's objections based on the trade-secrets privilege are invalid because she is not the holder of the privilege.
- Nothing in the Supervisor's contract with Election Systems & Software, Inc. ("ES&S") prevents her from providing the requested discovery.
- Supervisor Dent has conceded that the contract is no bar to discovery provided that this Court orders production of the requested materials.

I. THE SUPERVISOR'S OBJECTIONS TO THE REQUESTED INSPECTION ARE UNFOUNDED.

Supervisor Dent objects to Plaintiff's request for temporary access to eight iVotronic machines and related equipment for testing, as well as her request for permission to physically open and inspect the internal components of one iVotronic machine and one PEB. *See* Response to Request for Production (attached hereto as Exhibit B). None of the Supervisor's objections are valid.

A. Section 104.30 Does Not Preclude Inspection.

Supervisor Dent claims that Section 104.30, Florida Statutes, precludes her from providing Plaintiff with access to the requested equipment. This contention is utterly baseless. Section One of that statute criminalizes the "unlawful[]" possession of a voting system by an "unauthorized person." Clearly, the statute does not apply to this situation. Because any possession of any voting system will be pursuant to this Court's Order, by definition it cannot be "unlawful," nor would this make Plaintiff an "unauthorized person."

Section Two of the statute criminalizes tampering with a voting system or equipment "with the intention of interfering with the election process or the results thereof." Obviously, Plaintiff does not seek to interfere with the election process or the results thereof. Rather, as Supervisor Dent and this Court are well aware, Plaintiff seeks to ensure that this election process and the results thereof are accurately reported. Thus, any claim that Section 104.30 precludes production of the requested materials is totally unfounded.

B. Plaintiff Is Prepared To Purchase Equipment That Will Be Physically Opened For Inspection And To Post A Bond To Ensure That Other Equipment Is Returned To The County Undamaged.

Supervisor Dent further demands that Plaintiff purchase the equipment it seeks to inspect. Plaintiff is fully prepared to purchase one iVotronic machine and one PEB so that the equipment can be physically opened and inspected. Moreover, Plaintiff will post a bond to ensure that the eight other iVotronic machines and related equipment are returned to Sarasota County undamaged. Plaintiff has attached to this motion a proposed bond agreement, which uses boilerplate language under Florida Rule of Civil Procedure 1.960, which can be modified to reflect the specific conditions established by the Court. *See* Exhibit C. This bond should alleviate any concerns Supervisor Dent may have about allowing Plaintiff temporary access to the equipment she seeks.

II. THE SUPERVISOR'S OBJECTIONS TO THE REQUESTED PRODUCTION ARE UNFOUNDED.

Supervisor Dent has objected to production of the following materials requested by Plaintiff: (1) all files loaded onto an iVotronic machine as part of the "ballot programming" process, either for early voting or for Election Day voting; (2) all documents pertaining to the development tools, scripts, "makefiles," and other software as used in the November 2006 general election in Sarasota County to compile, debug, and test the iVotronic system, the personal electronic ballots (PEBs), and the elements of the Unity software suite; (3) all user manuals, operator manuals, training materials, and other documentation related to the use, operation, or maintenance of any part of the iVotronic system, the Unity software suite or any of its elements, or the PEBs; (4) all documentation necessary to extract and read the "three redundant memories" contained within the iVotronic machines.

None of Supervisor Dent's objections to this production are valid. She objects to production on the basis that the requested items are proprietary, trade secret matters under Section 90.506, Florida Statutes. She also invokes Sarasota County's contract with Defendant ES&S, but

acknowledges that this contract does not preclude her from providing materials pursuant to a proper court order.

A. Supervisor Dent May Not Invoke The Trade-Secrets Privilege.

Although Supervisor Dent has invoked the trade-secrets privilege as a basis for refusing the requested discovery, she is not the holder of the privilege and therefore may not properly invoke it. Under Section 90.506, Florida Statutes, “[a] person has a privilege to refuse to disclose, and to prevent other persons from disclosing, a trade secret *owned by that person* if the allowance of the privilege will not conceal fraud or otherwise work injustice.” Fla. Stat. § 90.506 (emphasis added). The statute provides that the “privilege may be claimed by the person or the person’s agent or employee.” *Id.* Supervisor Dent is neither the owner of the trade secret nor the owner’s agent or employee. Thus, she may not assert the trade-secrets privilege.

Moreover, Supervisor Dent’s response to the requested discovery is insufficient as Plaintiff is unable to ascertain exactly which materials Supervisor Dent considers privileged and why. Pursuant to Florida Rule of Civil Procedure 1.280(b)(5), “[w]hen a party withholds information otherwise discoverable under these rules by claiming that it is privileged . . . , the party shall make the claim expressly and shall describe the nature of the documents, communications, or things not produced or disclosed in a manner that, without revealing information itself privileged or protected, will enable other parties to assess the applicability of the privilege or protection.” Supervisor Dent has failed to allege a sufficient objection for Plaintiff to ascertain the applicability of the privilege to the requested materials.

B. Supervisor Dent’s Contractual Obligations To A Private Party Do Not Supersede Her Obligations to Provide the Requested Discovery.

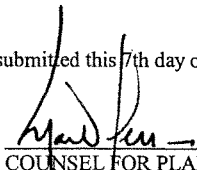
Supervisor Dent claims that Sarasota County's contract with ES&S precludes her from providing the requested discovery. But she acknowledges that the contract is no bar if this Court orders her to produce the requested materials. This is exactly what Plaintiff is seeking.

Moreover, nothing in the contract requires, or even authorizes Supervisor Dent, to refuse discovery. Rather, the contract simply states that "[i]n the event that a demand is made upon . . . the Sarasota County Supervisor of Elections for disclosure of materials or information considered by ES&S to be 'confidential,' 'proprietary,' or a 'trade secret,' the Sarasota County Supervisor of Elections . . . shall notify ES&S as soon as possible and ES&S shall immediately take all actions it deems necessary to defend itself against such disclosure." ES&S Contract at 9 (attached hereto as Exhibit D). Furthermore, the contract explicitly releases the Supervisor from liability for "any damages suffered by ES&S as a result of any disclosure of ES&S materials pursuant to law." *Id.*

CONCLUSION

For the foregoing reasons, Plaintiff respectfully requests that this Court grant its Motion to Compel Items 7, 8, 9, 12, 13, and 14 in its original Request for Production dated November 20, 2006 and attached hereto as Exhibit A.

Respectfully submitted this 7th day of December, 2006 by:


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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing was delivered by
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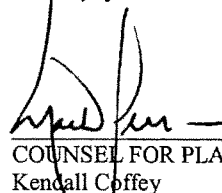
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IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
from the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

No:

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, consisting of Governor Jeb
Bush, Chief Financial Officer Tom Gallagher, and State
Senator Daniel Webster; SARASOTA COUNTY
CANVASSING BOARD, consisting of Supervisor of
Elections Kathy Dent, Judge Phyllis Galen, and
Commissioner Paul Mercier; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; and VERN BUCHANAN,
as nominee of the Republican Party for Representative
in Congress from the State of Florida's Thirteenth
Congressional District,

Defendants.

PLAINTIFF'S REQUEST FOR PRODUCTION OF DOCUMENTS
AND FOR INSPECTION OF TANGIBLE THINGS

Plaintiff, CHRISTINE JENNINGS, respectfully submits this Request for Production to the
Defendants, ELECTIONS CANVASSING COMMISSION OF THE STATE OF FLORIDA;
SARASOTA COUNTY CANVASSING BOARD; KATHY DENT, SARASOTA COUNTY
SUPERVISOR OF ELECTIONS; SUE M. COBB, SECRETARY OF STATE OF THE STATE OF

FLORIDA; and DAWN K. ROBERTS, DIRECTOR OF THE DIVISION OF ELECTIONS OF THE STATE OF FLORIDA, pursuant to Rule 1.350 of the Florida Rules of Civil Procedure.

DEFINITIONS

A. "Document" means any document in your custody, possession, or control, including, but not limited to, any printed, written, recorded, tapes, electronic, graphic or other tangible matter from whatever source, however produced or reproduced, whether in draft or otherwise, whether sent or received or neither, including the original, all amendments and addenda and any non-identical copy(ies) (whether different from the original because of notes made on or attached to such copy or otherwise) of any and all writings, correspondence, letters, telegrams, facsimiles, telex communications, cables, e-mail, notes, notations, papers, newsletters, memoranda, inter-office communications, releases, agreements, contracts, books, pamphlets, photographs, studies, minutes of meetings, recordings or other memorials of any type of personal or telephone conversations, meetings or conferences (including, but not limited to, telephone bills, and long distance charge slips), reports, analyses, evaluations, estimates, projections, forecasts, receipts, statements, accounts, books of account, diaries, calendars, desk pads, appointment books, stenographer's notebooks, transcripts, ledgers, registers, worksheets, journals, statistical records, cost sheets, summaries, lists, tabulations, digests, canceled or uncanceled checks or drafts, vouchers, charge slips, invoices, purchase orders, hotel charges, accountant's reports, financial statements, newspapers, periodical or magazine materials, any material underlying, supporting, or used in the preparation of any documents and all tangible things, of any and every kind whatsoever that could be considered a writing.

B. "Thing" means any thing in your custody, possession, or control, including, but not limited to, any voting system machine, voting system technology, voting system software, or voting system hardware.

C. "You," "Your," or "Defendants" shall mean the Defendants, as identified above, all of its subdivisions, agents, contractors, officers, directors, employees, attorneys, expert witnesses, accountants, auditors, subsidiaries, related agencies and companies and all other persons and/or entities over whom/which the Defendants has or has attempted to exercise control or authority, or which the Defendants or other persons or entities acting under its authority, control and/or direction, has hired, retained, and/or employed for any purpose relating to the issues in this case.

D. The words "pertain to" or "pertaining to" mean: relates to, refers to, references, revealing, reveals, reflects, regarding, contains, concerns, describes, embodies, mentions, constitutes, in connection, constituting, supports, corroborates, demonstrates, illustrates, proves, evidences, encompasses, shows, refutes, disputes, rebuts, controverts, or contradicts. Each of these words shall be interpreted to include the meaning of each other word or words.

E. Defendants shall mean ELECTIONS CANVASSING COMMISSION OF THE STATE OF FLORIDA; SARASOTA COUNTY CANVASSING BOARD; KATHY DENT, SARASOTA COUNTY SUPERVISOR OF ELECTIONS; SUE M. COBB, SECRETARY OF STATE OF THE STATE OF FLORIDA; and DAWN K. ROBERTS, DIRECTOR OF THE DIVISION OF ELECTIONS OF THE STATE OF FLORIDA.

F. As used herein, the past tense shall include the present tense, and vice versa. The singular includes the plural, and vice versa.

G. As used herein, the words "and" and "or" should be considered both conjunctive and disjunctive; the word "all" means "any and all."

INSTRUCTIONS

H. Any documents or things to which a claim of privilege is or will be asserted should be identified by author, signatory, description (e.g., letter, memorandum, telex, recording, etc.), title (if any), date, address (if any), general subject matter, present depository and present custodian and a complete statement of the ground for the claim of privilege should be set forth.

I. If it is maintained that any document or thing which is requested has been destroyed, set forth the contents of the document or thing, the date of such destruction, and the name(s) of the person(s) who participated in, authorized, or directed such destruction.

J. If any of the documents or things cannot be produced in full, produce to the extent possible, specifying the reason for the inability to produce the remainder.

K. This request is a continuing one. If after producing documents or allowing inspection of things, you become aware of, generate, or acquire any additional documents or things responsive to this request, you are required to produce those additional documents or things.

L. If any portion of any document or thing called for in this Request is considered privileged or is otherwise not produced, but the document or thing in its entirety is not privileged or otherwise subject to production, the Defendants must include the document or thing in their responses but may omit or delete any portions that are privileged so long as the document or thing clearly shows what

portions have been omitted or deleted and a summary or description of the subject matter of the omitted or deleted portions is provided. In addition, the Defendants must state the grounds upon which each portion of the document or thing is considered privileged, including the specific privilege, statute, or regulation relied upon.

REQUEST FOR PRODUCTION OF DOCUMENTS

1. All “event logs” (or “audit logs”) in digital form (on a recordable compact disc), as produced by the Unity software suite, covering every voter who voted or attempted to vote on an iVotronic voting machine used in early voting or in Election Day voting in Sarasota County in the November 2006 general election.

2. All “ballot-image logs” (or “ballot-image summaries”) in digital form (on a recordable compact disc), as produced by the Unity software suite, covering every voter who voted or attempted to vote on an iVotronic voting machine used in early voting or in Election Day voting in Sarasota County in the November 2006 general election.

3. All documents pertaining to a list of the machines, by serial number, that were used in each precinct and each early-voting station during the November 2006 general election.

4. All documents pertaining to the Electronics Systems & Software, Inc. (ES&S) source code to the iVotronic system as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a)

5. All documents pertaining to the ES&S source code to all elements of the Unity software suite as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a).

6. All documents pertaining to the ES&S source code to the personal electronic ballots (PEBs) as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a).

7. All documents pertaining to the development tools, scripts, “makefiles,” and other software as used in the November 2006 general election in Sarasota County to compile, debug, and test the iVotronic system, the PEBs, and the elements of the Unity software suite.

8. All user manuals, operator manuals, training materials, and other documentation related to the use, operation, or maintenance of any part of the iVotronic system, the Unity software suite or any of its elements, or the PEBs.

9. All documentation necessary to extract and read the “three redundant memories” contained within the iVotronic machines.

10. All documents pertaining to election-definition files and other necessary data (including passwords) to configure an iVotronic for each of the nine ballot styles used in Sarasota County in the November 2006 general election.

11. All digital copies of the ballot-style files for all nine ballot styles.

12. All files loaded onto an iVotronic machine as part of the “ballot programming” process, either for early voting or for Election Day voting.

REQUEST FOR INSPECTION OF TANGIBLE THINGS

13. Plaintiff hereby requests temporary access to eight iVotronic machines that generated particularly high undervote rates in the recent congressional election in Sarasota County, including at least one machine used on Election Day in each of six specified precincts (Precincts 31, 44, 74, 105,

117, and 118) and at least one high-undervote machine used in early voting; the carrying cases for those iVotronic machines, power adaptors, and other apparatus to set up the voting booths; two supervisor personalized electronic ballots ("PEBs"); nine regular PEBs (one configured for each ballot style used in Sarasota County in the recent election); a standard ES&S "Communications Pack" (containing a thermal printer and all the necessary cabling); and one PEB reader for transferring data from a PEB to a standard personal computer.

14. Plaintiff hereby requests permission to physically open and inspect the internal components of one iVotronic machine and one PEB.

15. Plaintiff hereby requests a full copy of all ES&S source code to the iVotronic system as used in the November 2006 general election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a); a full copy of all ES&S source code to all elements of the Unity software suite as used in the recent election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a); and a full copy of all ES&S source code to the PEBs as used in the recent election in Sarasota County and escrowed with the Department of State under Fla. Stat. § 101.5607(1)(a).

Respectfully submitted this 20th day of November, 2006 by:

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Respectfully submitted

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative
in Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs.

CASE NO. 2006 CA 002973

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, et al.,

Defendants.

ELLEN FEDDER, et al.,

Plaintiffs,

vs.

CASE NO. 2006 CA 002996
(Consolidated)

TOM GALLAGHER, et al.,

Defendants.

**DEFENDANT DENT'S RESPONSE TO PLAINTIFF'S
REQUEST FOR PRODUCTION OF DOCUMENTS AND FOR
INSPECTION OF TANGIBLE THINGS**

COMES NOW, by and through undersigned counsel, Kathy Dent
as Supervisor of Elections in Sarasota County, Florida, and
responds to the Plaintiff's Request for Production of Documents
and for Inspection of Tangible Things and with respect thereto,
states as follows:

1. The requested items have been previously produced to Plaintiff.

2. The specified items have been previously provided to the Plaintiff.

3. Copies of Sarasota County voting machines by serial number used in the November 2006 General Election will be provided to Plaintiffs.

4. Defendant does not maintain or have custody of the Election Systems and Software, Inc. (ES&S), source code.

5. See response to Paragraph 4.

6. See response to Paragraph 4.

7. Defendant objects to production of the documents specified in Paragraph 7, as such are proprietary, trade secret matters and pursuant to § 90.506, F.S., and the contract between Sarasota County and Election Systems & Software, Inc., the release of these items would breach their agreement and the proprietary protected nature of the items. Such items may not be released without the written consent of ES&S or proper court order.

8. Defendant objects to production of the documents specified in Paragraph 8, as such are proprietary trade secret matters and pursuant to § 90.506, F.S., and the contract between Sarasota County and Election Systems & Software, Inc., the release of these items would breach their agreement and the

proprietary protected nature of the items. Such items may not be released without the written consent of ES&S or proper court order.

9. Defendant objects to production of the documents specified in Paragraph 9, as such are proprietary matters and pursuant to § 90.506, F.S., and the contract between Sarasota County and Election Systems & Software, Inc., the release of these items would breach their agreement and the proprietary protected nature of the items. Such items may not be released without the written consent of ES&S or proper court order.

10. The documents requested herein are in the custody and control of Defendant Secretary of State of Florida.

11. Digital copies of the ballot-style files will be produced.

12. Defendant objects to production of the documents specified in Paragraph 12, as such are proprietary trade secret matters and pursuant to § 90.506, F.S., and the contract between Sarasota County and Election Systems & Software, Inc. Release of these items would breach the agreement and the proprietary protective nature of the items. Such items may not be released without the written consent of ES&S or proper court order.

13. This Defendant objects to the production and Plaintiff's "temporary" access to iVotronics owned by Sarasota County, Florida, as requested. Pursuant to Section 104.30,

Florida Statutes, release of voting machines would be improper. In addition, such contain the ballots in the election and are precluded from release. Further, the release of the voting machines would violate the contract between Election Systems & Software, Inc. and Defendant as such are considered confidential, proprietary and trade secrets of ES&S and may not be released without the consent of ES&S or proper court order.

Providing the machines for any type of access, opening or inspection, will violate the warranty between Sarasota County and Election Systems & Software, Inc. Based upon the foregoing, any release of these items is required by court order. Such court order should specify that parties receiving the items purchase the equipment, as such will be compromised by any actions by Plaintiff and are then unable to be used again by Sarasota County.

14. Objection, see Paragraph 13.

15. This Defendant does not possess the ES&S source code or other items requested herein, which are in the custody and control of Election Systems & Software, Inc. and the Florida Department of State.

Respectfully submitted this 5th day of December, 2006.



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 ATTORNEY

BOND AGREEMENT

I, Christine Jennings, as principal and **(surety's name)**, as Surety, are bound to the Supervisor of Elections of Sarasota County in the sum of \$..... for the payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if plaintiff shall **(insert condition)**, then this bond is void; otherwise it remains in force.

SIGNED AND SEALED on

As Principal

(Surety's name)

By

As Attorney in Fact

As Surety

Approved on(date).....

(Name of Clerk)

As Clerk of the Court

By

As Deputy Clerk

EXHIBIT C

A-322

ELECTION SYSTEMS & SOFTWARE, INC.
VOTER TABULATION SYSTEM AND SERVICES AGREEMENT

CONTRACT NO.
BGC APPROVED 11/13/01

This Agreement is made as of the date it is executed by the last of the parties named below on the signature page (the "Effective Date").

BETWEEN: Election Systems & Software, Inc., a Delaware corporation ("ES&S"), whose address is: 11208 John Galt Blvd., Omaha, Nebraska 68137.

AND: The County of Sarasota, Florida ("Customer"), a political subdivision of the State of Florida, whose address is: 1660 Ringling Blvd., 2nd Floor, Sarasota, Florida 34236.

RECITALS:

- A. Customer has agreed to purchase/license voter tabulation equipment and related software and services from ES&S for use in Sarasota County, FL (the "Jurisdiction"). The terms and conditions under which the equipment, software and services shall be provided are set forth in the **GENERAL TERMS** attached hereto and incorporated herein by reference.
- B. The following Exhibits are incorporated into, and constitute an integral part of, this Agreement (check all that apply):
- X Exhibit A (Pricing Summary)
 - X Exhibit B (ES&S Equipment)
 - X Exhibit C (ES&S Software Products)
 - X Exhibit D (Third Party Items)
 - X Exhibit E (Election Support Services)
 - Exhibit F (Hardware Maintenance Services)
 - Exhibit G (Software Maintenance Services)
 - X Exhibit H (Definitions)

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, each of the parties hereto:

- Agrees to the **GENERAL TERMS** and the terms and conditions set forth in each applicable Exhibit.
- Agrees that at all times, this Agreement shall be governed by and construed in accordance with the laws of the State of Florida.
- Represents and warrants to the other party that as of its signature date indicated below it has full power and authority to enter into and perform this Agreement, and that the person signing below on its behalf has been properly authorized to execute this Agreement.
- Acknowledges that it has read this Agreement, understands it and intends to be bound by it.

[Signature Page to Follow]

161880.3

EXHIBIT D

A-323

<p>ATTEST:</p> <p>KAREN E. RUSHING Clerk of Circuit Court Ex-Officio Clerk of the Board of County Commissioners of Sarasota County, Florida</p> <p>By: <u>[Signature]</u> Deputy Clerk</p>	<p>BOARD OF COUNTY COMMISSIONERS OF SARASOTA COUNTY, FLORIDA</p> <p>By: <u>[Signature]</u> Chairman</p>
<p>WITNESSES:</p> <p><u>[Signature]</u> (Signature) <u>Deborah A. Koperski</u> (Print Name)</p> <p><u>[Signature]</u> (Signature) <u>Beverly T. Cavanaugh</u> (Print Name)</p>	<p>ELECTION SYSTEMS & SOFTWARE, INC.</p> <p>By: <u>[Signature]</u> CFO</p>
<p>Approved as to form and correctness:</p> <p><u>[Signature]</u> County Attorney</p>	

CONTRACT NO. _____
 BCC APPROVED _____

GENERAL TERMS
 ARTICLE 1
 DEFINITIONS

All capitalized terms used, but not defined, in these General Terms or on an Exhibit are defined in Exhibit H.

ARTICLE 2
 SALE OF ES&S EQUIPMENT AND THIRD PARTY ITEMS/LICENSE OF ES&S SOFTWARE PRODUCTS

2.1 **Purchase Terms.** Subject to the terms and conditions of this Agreement, ES&S agrees to sell, and Customer agrees to purchase, a turnkey voting system which shall include the ES&S Equipment and the Third Party Items described on Exhibits B and D hereto and the ES&S Software Products licensed pursuant to Section 2.2 below (hereinafter the "System"). The payment terms for the ES&S Equipment and Third Party Items are set forth on Exhibit A. Title to the Equipment shall pass to Customer as Customer pays ES&S for the ES&S Equipment, ES&S Software Products and Third Party Items, as set forth in Exhibit A.

2.2 **Grant of Licenses.**

a. **ES&S Software Products, Excluding ES&S Firmware.** Subject to the terms and conditions of this Agreement, ES&S hereby grants to Customer a nonexclusive, nontransferable license to use ES&S' software, as described on Exhibit C hereto, and the related Documentation in the Jurisdiction. The license allows Customer to use and copy ES&S' software (in object code only) and the Documentation, solely for the purposes of defining an election and tabulating and reporting election results in the Jurisdiction for the term of Customer's use of the ES&S Equipment.

b. **ES&S Firmware.** Subject to the terms and conditions of this Agreement, ES&S hereby grants to Customer a nonexclusive, nontransferable license to use ES&S' firmware, which is delivered as a part of the ES&S Equipment and is further described on Exhibit C hereto (the "ES&S Firmware") for the term of Customer's use of the ES&S Equipment. The license allows Customer to use the ES&S Firmware (in object code only) in the Jurisdiction and solely in the course of operating the ES&S Equipment as contemplated by the Documentation therefor.

c. **COLLECTIVE DEFINITION AS "ES&S SOFTWARE PRODUCTS".** THE ES&S SOFTWARE DESCRIBED IN SECTION 2.2(a) AND THE ES&S FIRMWARE ARE ES&S' PROPRIETARY SOFTWARE AND ARE HEREINAFTER COLLECTIVELY REFERRED TO AS THE "ES&S SOFTWARE PRODUCTS".

d. **Prohibited Uses.** Customer may not take any of the following actions with respect to the ES&S Software Products or their Documentation:

i. Reverse engineer, decompile, disassemble, re-engineer or otherwise create, attempt to create, or permit, allow or assist others to create, the source code or the structural framework for part or all of the ES&S Software Products;

ii. Subject to section 3.9 herein, cause or permit any use, display, loan, publication, transfer of possession, sublicensing or other dissemination of the ES&S Software Products or Documentation, in whole or in part, to or by any third party without ES&S' prior written consent; or

iii. Cause or permit any change to be made to the ES&S Software Products without ES&S' prior written consent.

2.3 **License Fees.** In consideration for ES&S' grant of the license for the ES&S Software described in Section 2.2(a), Customer shall pay ES&S the onetime License Fees set forth on Exhibit A for the term of Customer's use of the ES&S Equipment. The consideration for ES&S' grant of the license for the ES&S Firmware is included in the cost of the ES&S Equipment.

2.4 **Term of Licenses.** The licenses granted in Section 2.2 shall commence upon the delivery of the ES&S Software described in Section 2.2(a) and continue for the term of Customer's use of the ES&S Equipment. The licenses shall survive the termination of all other obligations under this Agreement and the termination of all Exhibits; provided, however, that ES&S may terminate either license if Customer fails to pay the consideration due for, or breaches Sections 2.2, 2.5, or 3.8 with respect to, such license. Upon the termination of either license for ES&S Software Products or Customer's discontinuance of use of any ES&S Software Product, Customer shall immediately return such ES&S Software Product and the related Documentation (including any and all copies thereof) to ES&S, or (if requested by ES&S) destroy such ES&S Software Product and Documentation and certify in writing to ES&S that such destruction has occurred.

2.5 **Source Code.** The licenses granted in Section 2.2 do not permit Customer to use the source code for the ES&S Software Products. ES&S shall place the source code in escrow with the Florida Department of State and its then current third party escrow agent, and will likewise place in escrow the source code for all Updates (in the form of a complete version update), Add-Ons and New Products (as defined below) provided to Customer. The source code shall be accompanied by such flowcharts and instructions in machine-readable format as shall be reasonably necessary to enable Customer to use the source code as permitted below. Should ES&S cease operations and become unable to maintain and support any of the ES&S Software Products while under an obligation to do so, Customer shall have the right to obtain the source code to the extent necessary to enable Customer to use such ES&S Software Products in accordance with this Agreement. The source code will remain the property of ES&S and may not otherwise be used by Customer. ES&S shall furnish Customer with the name and address of said third party escrow agent. ES&S agrees to immediately notify Customer of any change in escrow agent or change in address of the current escrow agent. ES&S shall at its own cost maintain source code(s) compliant with all state and federal rules, regulations and laws.

2.6 **Updates, Add-Ons and New Products.**

a. **Updates.** During the Warranty Period, ES&S shall provide new releases, upgrades or maintenance patches to the ES&S Software Products, along with appropriate Documentation (all of which shall be collectively referred to as "Updates") to Customer on a timely schedule and at no additional charge to Customer. Customer is responsible for obtaining any upgrades or purchases of Third Party Items required to operate the Updates. All Updates shall be deemed to be ES&S Software Products for purposes of this Agreement upon delivery. Customer may install Updates in accordance with ES&S' recommended instructions or may request that ES&S install the Updates. ES&S may charge Customer at its then-current rates to (i) install Updates or (ii) provide maintenance and support on the ES&S Software Products which is required as a result of Customer's failure to timely install an Update which has been timely provided by ES&S. If Customer proposes changes in the ES&S Software Products to ES&S, such proposals will become ES&S' property. ES&S may, in its sole discretion, elect to make or not to make such changes without reference or compensation to Customer or any third party. Upon the termination of the Warranty Period, Customer shall be entitled to receive the Software Maintenance and Support (as described in Section 2.7 below) on the ES&S Software Products as agreed to by ES&S and the Sarasota County Supervisor of Elections. The parties acknowledge that the providing of Updates is a part of the Software Maintenance and Support, and

accordingly that the cost of Updates is included in the annual fee for Software Maintenance and Support.

b. **Add-Ons and New Products.** From time to time, ES&S may offer new features which can be added on to the ES&S Equipment and/or ES&S Software Products ("Add-Ons") and new hardware/software products ("New Products") to Customer. Customer may elect to purchase or license, as applicable, an Add-On or New Product upon the payment of a fee to ES&S. Unless any such purchase or license is effectuated pursuant to a separate agreement, the Add-On or New Product shall be deemed to be part of the ES&S Equipment or ES&S Software Products upon payment of such fees. Unless otherwise agreed to between the parties, each Add-On or New Product which is deemed to be part of the ES&S Equipment and/or ES&S Software Products will be subject to the warranty set forth in Section 3.3(b) upon delivery, and Customer may thereafter elect to receive Hardware Maintenance Services (as described in Section 2.7 below) and/or Software Maintenance and Support upon the expiration of the Warranty Period.

2.7 **Compliance with Federal and State Law.** ES&S represents and warrants to Customer that the ES&S Equipment and ES&S Software Products, Updates, Add-Ons and New Products each comply with all applicable requirements of federal and state election laws and regulations. ES&S represents and warrants that the turnkey voting system comprised of ES&S Equipment, ES&S Software Products, and Third Party Items either provided by ES&S or meeting ES&S' specifications and which is being provided to Customer hereunder, is in full and complete compliance with all applicable federal and state election laws and regulations. ES&S further represents and warrants that the System has been certified by the Florida Secretary of State, Division of Elections, for use in the State of Florida. ES&S further represents and warrants that during the Warranty Period and thereafter so long as Customer or the Sarasota County Supervisor of Elections is receiving Hardware Maintenance Services and Software Maintenance and Support (each as defined below), the System shall be maintained or upgraded by ES&S in such a way as to remain fully and completely compliant with all federal and state election laws and regulations, including all current and future requirements necessary to remain certified for use in the State of Florida. For purposes of the immediately preceding sentence, "maintained or upgraded" shall not mean the replacement of the System. Customer shall be responsible for the cost of any Third Party Items which ES&S notifies Customer are hereafter required in order to remain compliant and certified.

As provided in Florida Statutes, Section 287.132-133, by entering into this Agreement or performing any work in furtherance hereof, ES&S certifies that it, its affiliates, suppliers, subcontractors, and consultants who will perform hereunder, have not been placed on the convicted vendor list maintained by the State of Florida Department of Management Services within the thirty-six (36) months immediately preceding the date hereof. This notice is required by Florida Statutes, Section 287.133(3)(a).

For purposes of this Agreement, "Hardware Maintenance Services" are those services described on Exhibit F, and "Software Maintenance and Support" are those services described on Exhibit G. Exhibits F and G are provided for informational purposes only. The parties will execute separate stand-alone agreements which will be substantially similar to Exhibits F and G, under which ES&S will provide the Hardware Maintenance Services and Software Maintenance and Support to Customer upon the termination of the Warranty Period.

2.8 **Compliance with ADA.**

a. **Representation.** ES&S represents to Customer that the System and each component thereof complies with the Americans with Disabilities Act to the extent certified from time to time by the Florida Secretary of State, Division of Elections.

b. Cure. In the event that Customer and/or the Sarasota County Supervisor of Elections is sued in a court of competent jurisdiction and said court finds that the System and/or a component(s) thereof is not compliant with the Americans with Disabilities Act as it pertains to the ability of a voter to vote, ES&S agrees, at its sole cost, to immediately take whatever action is necessary, to the extent technically feasible, to comply with court orders and bring the System and/or a component(s) thereof into compliance.

ARTICLE 3 MISCELLANEOUS

3.1 Performance Bond. No later than 90 days after the Effective Date, ES&S shall post in favor of, and provide to Customer, a performance bond, acceptable to and approved by Customer, to guarantee performance of all terms and conditions of this Agreement. The performance bond shall be with a bank, surety, or other financial institution acceptable to Customer which is authorized to do business in the State of Florida and which has a "A" policy holder rating and a financial rating of at least Class VII in accordance with the most current of Best's Key Rating Guide. The performance bond shall be in the amount of 100% of the Total Net Sale (as defined on Exhibit A). The performance bond shall be renewed annually and shall terminate upon the expiration of the Warranty Period provided for in Section 3.3. On each renewal date, the amount of the performance bond may be reduced to an amount mutually agreeable to both parties which reflects the value of goods and services to be provided or being provided by ES&S to Customer. The ability of Customer to receive payment under the performance bond shall not be limited by any other provision of this Agreement. In the event that ES&S does not provide the performance bond to Customer within 90 days after the Effective Date, Customer may terminate this Agreement in accordance with Section 3.14.

3.2 Delivery; Risk of Loss. ES&S will deliver all of the Equipment and Software that is the subject of this Agreement and identified on Exhibits B-D to Customer at Customer's designated location no later than December 15, 2001. Risk of loss with respect thereto shall pass to Customer when such items are delivered to Customer at Customer's designated location during regular business hours.

3.3 Acceptance; Warranties.

a. Acceptance. Customer will not accept the Equipment and Software until mutually agreeable acceptance testing is performed on the System by ES&S and the System performs in accordance with this Agreement and to the satisfaction of Customer. Installation and Integration (as set forth on Exhibit E) of the System by ES&S shall occur within ten (10) days, unless extended by mutual agreement of the parties hereto, of delivery pursuant to Section 3.2 and shall occur prior to said acceptance testing. Acceptance testing shall be conducted on a mutually agreeable date and completed within twenty (20) days, unless extended by mutual agreement of the parties hereto, after Installation and Integration. The parties hereto acknowledge and agree that a "Project Plan" not inconsistent with this Agreement will be prepared and mutually agreed upon by the parties subsequent hereto, that said plan will become an integral part of this Agreement and that the terms of which are hereby incorporated herein by this reference. The acceptance testing is to confirm that the Equipment, ES&S Software Products and the System as a whole perform in accordance with this Agreement. If the ES&S Equipment, ES&S Software Products and/or the System as a whole fail(s) to perform in accordance with this Agreement, ES&S shall take back the failed Equipment, and/or Software and immediately furnish Customer with new, replacement Equipment, and Software and/or immediately take whatever action is necessary for the System to perform in accordance with this Agreement. In any event and notwithstanding any other provision of this Agreement, if delivery, installation and integration, and acceptance testing as set forth above have not been completed or the System fails to perform in accordance with this Agreement and to the satisfaction of Customer by January 15, 2002, unless

extended by mutual agreement of the parties hereto, then Customer has the right, without liability and upon notice to ES&S, to immediately and unilaterally terminate this Agreement and ES&S agrees to refund all monies paid to ES&S by Customer pursuant to this Agreement within thirty (30) days of termination.

b. **ES&S Equipment/ES&S Software Products.** ES&S warrants that for the period beginning from the date the equipment is accepted (as per Section 3.3(a)) by Customer through December 31, 2004, (the "Warranty Period"), it will repair or replace at no cost to the Customer any component of the ES&S Equipment or ES&S Software Products which, while under normal use and service: (i) fails to perform in accordance with its Documentation in any material respect, or (ii) is defective in material or workmanship. Any repaired or replaced item of ES&S Equipment or ES&S Software Products shall be warranted only for the unexpired term of the original Warranty Period. All replaced components of the ES&S Equipment or ES&S Software Products will become the property of ES&S. This warranty is effective provided that (i) Customer, within thirty (30) days of discovery of said failure of performance or defect, notifies ES&S of the failure of performance or defect and is otherwise in compliance with its obligations hereunder, (ii) the ES&S Equipment or ES&S Software Product to be repaired or replaced has not been repaired, changed, modified or altered except as authorized or approved by ES&S, (iii) the ES&S Equipment or ES&S Software Product to be repaired or replaced is not damaged due to accident, theft, vandalism, neglect, abuse, use which is not in accordance with instructions or specifications furnished by ES&S or causes beyond the reasonable control of ES&S or Customer, including natural disaster, fire, flood or Acts of God, and (iv) Customer has installed and is using the most recent Update, or the second most recent Update, provided to it by ES&S.

c. **System.** ES&S warrants that the System, ES&S Equipment, ES&S Software Products, Third Party Items, and/or other materials provided by ES&S to Customer pursuant to this Agreement will operate as a turnkey voting system to accommodate a jurisdiction of at least 450,000 registered voters, and that the ES&S Equipment and ES&S Software Products will operate in conjunction with the Third Party Items during the Warranty Period, provided that (i) Customer has installed and is using the most recent Update, or the second most recent Update, provided to it by ES&S, and (ii) the Third Party Items are performing in accordance with their own specifications and documentation in all material respects and are not defective in material or workmanship. ES&S shall, at its sole expense, immediately take whatever actions are necessary so as to satisfy said warranty. Customer acknowledges that ES&S has merely purchased the Third Party Items for resale or rental to Customer, and that the proprietary and intellectual property rights to the Third Party Items are owned by parties other than ES&S ("Third Parties"). Customer further acknowledges that except for the payment to ES&S for the Third Party Items, all of its rights and obligations with respect thereto flow from and to the Third Parties. ES&S shall provide Customer with copies of all documentation and warranties for the Third Party Items which are provided to ES&S.

d. **Services.** ES&S warrants that it shall perform all services, including Election Support Services as set forth in Exhibit E, and provide all materials under this Agreement in a professional, workmanlike manner and in strict accordance with industry standards and with the provisions of this Agreement. ES&S shall perform all services under this Agreement in a professional, workmanlike manner, with such professional care, technical skill, ability, and diligence as is required of similar companies having the level of skill, expertise, and specialized knowledge, as represented to Customer, both orally and in writing, to be possessed by ES&S. In the event of a breach of this Warranty, ES&S shall, at its sole expense, timely re-perform the services or cause the services to be timely re-performed so as to satisfy said Warranty.

e. **Exclusive Remedies.** IN THE EVENT OF A BREACH OF SUBSECTIONS 3.3(b), 3.3(c) OR 3.3(d), ES&S' OBLIGATIONS, AS DESCRIBED IN SUCH SUBSECTION, ARE CUSTOMER'S SOLE AND EXCLUSIVE REMEDIES. ES&S EXPRESSLY DISCLAIMS ALL

WARRANTIES, WHETHER EXPRESS OR IMPLIED, WHICH ARE NOT SPECIFICALLY SET FORTH IN THIS AGREEMENT, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY.

3.4 Routine Maintenance For ES&S Equipment During Warranty Period. During the Warranty Period, Customer may request that ES&S provide the Routine Maintenance Services (as defined on Exhibit F) for (1) one or more units of ES&S Equipment, at no additional charge to Customer. Any such request shall be made at least sixty (60) days before the Routine Maintenance Services are desired. The terms and conditions of Section 3(c), of Exhibit F, shall govern the providing of the Routine Maintenance Services. ES&S shall convey to Customer in writing the proper method of storing the ES&S Equipment and Customer shall properly store the ES&S Equipment when not in use. Upon the termination of the Warranty Period, Customer shall be entitled to receive the Hardware Maintenance on said equipment as agreed to between ES&S and the Sarasota County Supervisor of Elections.

3.5 Timely Performance. The parties mutually agree that time is of the essence in the performance of this Agreement. If, due to ES&S' negligence, or circumstances within the control of ES&S, (i) ES&S fails to timely perform as required by this Agreement, and (ii) such failure has or will result in a material detrimental impact on Customer's ability to define an election or tabulate or report election results in the Jurisdiction in a satisfactory manner or on a timely basis, then at the discretion of Customer, Customer may pass to ES&S the direct, reasonable, total out-of-pocket expenses incurred by Customer in curing such failure. Customer will submit to ES&S an itemized statement setting forth the charges for said expenses. Upon ES&S' request, Customer will also provide ES&S with copies of invoices and other back-up information necessary to confirm the itemized expenses. ES&S will pay all such itemized expenses in cash or, at Customer's option, by giving Customer a credit against future payments due to ES&S. Customer will take all reasonable steps to mitigate the expenses incurred by Customer hereunder, and ES&S will work with Customer to assist in such mitigation efforts and to achieve the curing of the failure as expeditiously as possible. Except as provided for in Section 3.3(a), the remedies set forth in this section are the full extent of Customer's remedies for the performance failures described in this Section 3.5.

3.6 Limitation Of Liability. Neither party will be liable for any indirect, incidental, punitive, exemplary, special or consequential damages of any kind whatsoever arising out of or relating to this Agreement. Except for such liability as may arise under Sections 2.8, 3.5 and 3.10, ES&S' total liability to Customer arising out of or relating to this Agreement will not exceed the aggregate amount to be paid to ES&S hereunder. Any action by Customer against ES&S shall be commenced within the applicable statute of limitations period. By entering into this Agreement, Customer agrees to accept responsibility for (a) the use of the Equipment and Software, and (b) the selection of, use of and results obtained from any equipment, software or services not provided by ES&S and used with the Equipment or Software. ES&S will not be liable on this Agreement for any claim, damage, loss, judgment, penalty, cost, amount paid in settlement or fee which is caused by (y) Customer's failure to install and use the most recent Update, or the second most recent Update, timely provided to it by ES&S or (z) Customer's election not to receive, or to terminate, the Hardware Maintenance Services, or the Software Maintenance and Support.

3.7 Taxes; Interest. Customer will provide ES&S with proof of its tax-exempt status upon request. If Customer does not provide such proof, it shall pay, or shall reimburse ES&S for, all sales and use, excise or other similar taxes imposed on the transactions contemplated by this Agreement, but shall in no event be liable for taxes imposed on or measured by ES&S' income. If Customer disputes the applicability of any tax to be paid pursuant to this Section 3.7, it shall pay the tax and may thereafter seek a refund. Any disputed or undisputed payment which is past due for more than 30 days will bear interest at the rate of one percent (1%) per month (or such lesser amount as may be provided for under Florida Statutes, Sections 218.70 through 218.80 (the "Florida Prompt Payment Act")) for each month or portion thereof during which it remains unpaid.

3.8 Proprietary Rights. Customer acknowledges and agrees as follows:

a. ES&S owns the ES&S Software Products, all Documentation and training materials provided by ES&S, the design and configuration of the ES&S Equipment and the format, layout, measurements, design and all other technical information (except for Customer supplied information such as election information) associated with the ballots to be used with the ES&S Equipment. Customer has the right to use the aforementioned items to the extent specified in this Agreement. ES&S likewise owns all patents, trademarks, copyrights, trade names and other proprietary or intellectual property in, or used in connection with, the aforementioned items. The aforementioned items also contain confidential and proprietary trade secrets of ES&S which are protected by law and are of substantial value to ES&S. ES&S acknowledges that Customer and Sarasota County Supervisor of Elections retain all proprietary rights to all data collected by Customer and/or Sarasota County Supervisor of Elections as a result of conducting elections and tabulating and reporting election results in the jurisdiction, including all voter demographic data and voting statistics.

b. Customer shall not knowingly cause or permit the adaptation, conversion, reverse engineering, disassembly or de-compilation of any of the ES&S Equipment or ES&S Software Products.

c. Customer shall keep the ES&S Software Products and related Documentation free and clear of all claims, liens and encumbrances and shall maintain all copyright, trademark, patent or other intellectual or proprietary rights notices which are set forth on the ES&S Equipment, the ES&S Software Products, the Documentation, training materials and ballots which are provided, and all permitted copies of the foregoing.

3.9 **Confidentiality.** As a political subdivision of the State of Florida, Customer agrees that any and all information and the materials provided by ES&S hereunder that are marked "confidential," "proprietary," or "trade secret" and which are not required to be made publicly available under public records laws, or any other laws of the State of Florida or the United States of America, will be kept confidential by Customer. Customer and the Sarasota County Supervisor of Elections shall not be liable for any damages suffered by ES&S as a result of any disclosure of ES&S materials pursuant to law. ES&S shall mark any materials or information that it considers to be "confidential," "proprietary," or a "trade secret." In the event that a demand is made upon Customer or the Sarasota County Supervisor of Elections for disclosure of materials or information considered by ES&S to be "confidential," "proprietary," or a "trade secret," the Sarasota County Supervisor of Elections or Customer shall notify ES&S as soon as possible and ES&S shall immediately take all actions it deems necessary to defend itself against such disclosure, provided that ES&S may not take action that would effect (a) the ability of Customer to operate the System; or (b) the obligations of ES&S under this agreement. In the case of any action brought against the Sarasota County Supervisor of Elections and/or Customer pursuant to Florida Statutes Chapter 119 or other law, ES&S shall either (a) defend the Sarasota County Supervisor of Elections and/or Customer in any such action or (b) reimburse the Sarasota County Supervisor of Elections and/or Customer all fees and costs incurred in defense of such action. For the purpose of this paragraph "action" includes proceedings at the trial and the appellate levels.

3.10 **Indemnification by ES&S.**

a. **Intellectual Property Infringement.** ES&S will indemnify, defend and hold Customer and/or the Sarasota County Supervisor of Elections harmless from and against any and all damages, amounts paid in settlement and reasonable fees and costs (including reasonable attorneys fees) (collectively "Adverse Consequences") arising out of or relating to a claim that any of the ES&S Equipment or ES&S Software Products infringes upon any third party's United States patent existing as of the date hereof or United States copyright, trademark or trade secret (a "Third Party Infringement Claim"). Notwithstanding the foregoing, ES&S shall have no liability to Customer for any Third Party Infringement Claim resulting out of any acts, errors or omissions of Customer, resulting from (i)

Customer's failure to timely install and use any Update timely provided to it by ES&S; (ii) the use of any ES&S Equipment or ES&S Software Products in combination with other equipment, hardware or software not meeting ES&S' specifications for use with such ES&S Equipment or ES&S Software Products; or (iii) Customer's modification or alteration of any item of ES&S Equipment or ES&S Software Products without the prior written consent of ES&S. ES&S represents to Customer that no Third Party Infringement Claim is outstanding against ES&S as of the Effective Date. Customer shall notify ES&S within thirty (30) days of discovery of any Third Party Infringement Claim. Customer hereby gives ES&S full and complete authority, and shall provide such information and assistance as is necessary (at ES&S' expense with respect to reasonable out-of-pocket costs), to enable ES&S to defend, compromise or settle a Third Party Infringement Claim. In addition, if Customer is prevented by a Third Party Infringement Claim from using any of the ES&S Equipment or ES&S Software Products in substantially the manner contemplated by this Agreement, ES&S shall, at its sole option and expense, procure for Customer the right to continue such use or replace or modify the infringing item. **THE FOREGOING STATES ES&S' ENTIRE LIABILITY FOR ANY INTELLECTUAL PROPERTY INFRINGEMENT ARISING UNDER THIS AGREEMENT.**

b. **Personal Injury/Property Damage.** ES&S shall indemnify, defend and hold harmless Customer and/or the Sarasota County Supervisor of Elections from and against any and all Adverse Consequences arising out of or relating to personal injury (including death) or property damage which is caused by any negligent or willful act, error or omission of ES&S, its employees, subcontractors and any other persons under ES&S' authority and control. Customer shall notify ES&S within thirty (30) days of discovery of any claim for which it may be entitled to indemnification under this Section 3.10(b), and hereby gives ES&S full and complete authority, and shall provide such information and assistance as is necessary (at ES&S' expense with respect to reasonable out-of-pocket costs), to enable ES&S to defend, compromise or settle any such claim.

c. **Americans With Disabilities Act.** ES&S will indemnify, defend and hold Customer and/or the Sarasota County Supervisor of Elections harmless from and against any and all Adverse Consequences arising out of or relating to a lawsuit which alleges that the System, or any component(s) thereof, fails to comply with the Americans with Disabilities Act as represented by ES&S in Section 2.8(a). Customer hereby gives ES&S full and complete authority, and shall provide such information and assistance as is necessary (at ES&S' expense with respect to reasonable out-of-pocket costs), to enable ES&S to defend, compromise or settle any such lawsuit.

d. **Survival.** These indemnification provisions shall survive the termination of all other obligations under this Agreement and the termination of all exhibits herein.

3.11 **Indemnification By Customer.** Sarasota County is a political subdivision defined in Section 768.28, Florida Statutes, agrees to be fully responsible to the limits set forth in such statute for money damages attributable to injury to or loss of property, personal injury or death caused by the negligent or wrongful act of its employees, and agrees to be liable to the statutory limits for any such damages. Nothing contained in this section shall be construed to be a waiver by Sarasota County of any protections under sovereign immunity, Section 768.28, Florida Statutes, or any other similar provision of law. Nothing contained herein shall be construed to be a consent by Sarasota County to be sued by third parties in any matter arising out of this or any other agreement.

3.12 **Insurance.** Before performing any contract work, the ES&S shall procure and maintain, during the life of the contract, unless otherwise specified, insurance of the types and kinds listed below. The policies of insurance shall be primary and written on forms acceptable to the Customer and placed with insurance carriers approved and licensed by the Insurance Department in the State of Florida and meet a minimum financial AM Best and Company rating of no less than "Excellent". VII. No changes are to be made to these specifications without prior written specific approval by the Customer.

- a. **COMPENSATION:** ES&S will provide Workers compensation Insurance, on behalf of all employees who are to provide a service under this contract, as required under Chapter 440, Florida Statutes, and Employers Liability with limits of not less than \$100,000 per employee per accident; \$500,000 disease aggregate; and \$100,000 per employee per disease.
- b. **COMMERCIAL GENERAL LIABILITY:** including, but not limited to, bodily injury, property damage, contractual, products and completed operations, and personal injury with limits of not less than \$1,000,000 per occurrence, \$2,000,000 aggregate covering all work performed under this Agreement.
- c. **AUTOMOBILE LIABILITY:** including bodily injury and property damage, including all vehicles, owned, leased, hired and non-owned vehicles with limits of not less than \$1,000,000 combined single limit covering all work performed under this Agreement.
- d. **ERRORS AND OMISSIONS:** with limits of not less than \$1,000,000 for errors and omissions associated with the ES&S Software Products provided under this Agreement. ES&S shall maintain such insurance for at least two (2) years from the termination of this Agreement and during this two (2) year period, ES&S shall use its best efforts to ensure that there is no change of the retroactive date on this insurance coverage. If there is a change that reduces or restricts the coverage carried during the Agreement, ES&S shall notify Customer's Risk Management Office within thirty (30) calendar days of the change.
- e. **UMBRELLA LIABILITY** – with limits of not less than \$5,000,000 per occurrence covering all work performed under this contract.

3.13 **Excusable Nonperformance.** Except for a delay or the failure in the payment of money, if either party is delayed or prevented from performing its obligations under this Agreement due to any cause beyond its reasonable control, including natural disaster, fire, flood, Acts of God, labor disputes and governmental regulations, not the fault of the party failing or delaying the performance, the delay shall be excused during the continuance of, and to the extent of, such cause, and the period of performance shall be extended to the extent necessary to allow performance after the cause of delay has been removed. ES&S agrees to work with Customer to develop mutually agreeable alternatives in order to minimize the negative impact of any such delay.

3.14 **Term; Termination.** This Agreement shall become effective on the Effective Date and shall continue until Customer ceases to use the ES&S Equipment and ES&S Software Products, unless otherwise terminated as provided herein. The parties acknowledge and agree that certain of the Exhibits contain separate termination provisions, and that the termination of any Exhibit shall not constitute a termination of any other Exhibit or of the Agreement as a whole. This Agreement may be terminated at any time:

- a. By either party if the other party breaches any material provision hereof and does not cure such breach within 30 days after it receives notification thereof from the non-breaching party; or
- b. By either party in the event that funds are not appropriated or otherwise made available by Customer to support the continuation of performance hereunder in any subsequent fiscal period. Customer shall notify ES&S of the termination, which may occur no later than the beginning of the subsequent fiscal period. Upon termination, ES&S shall be reimbursed for the reasonable value of the unrecovered Firmware or Software, if applicable, delivered to Customer hereunder. Customer acknowledges and agrees that its estimated requirements cover the period of this Agreement and are reasonably firm and continuing, and that sufficient funds to pay for the first twelve (12) months of this Agreement are available.

3.15 **Assignment.** Except in the case of a sale, transfer or assignment of all or substantially all of the assets of ES&S to a successor who has asserted its intent to continue the business of ES&S, neither party may assign or transfer this Agreement or assign, subcontract or delegate any of its rights, duties or obligations hereunder without the prior written consent of the other party hereto, such consent not to be unreasonably withheld.

3.16 **Remedies.** Except as specifically provided herein, the remedies provided to the parties under this Agreement shall be cumulative and non-exclusive, and the parties shall be entitled to seek any other rights to which they may be entitled at law or in equity, subject to the terms of this Agreement.

3.17 **Entire Agreement.** This Agreement, including all Exhibits hereto (all of which are incorporated herein by this reference), contains the entire agreement of the parties with respect to the subject matter hereof and shall supersede and replace any and all other prior or contemporaneous discussions, negotiations, agreements or understandings between the parties, whether written or oral, regarding the subject matter hereof. Any provision of any purchase order, form or other agreement which conflicts with or is in addition to the provisions of this Agreement shall be of no force or effect. In the event of any conflict between a provision contained in an Exhibit to this Agreement and these General Terms, the provision contained in the Exhibit shall control. No waiver, amendment or modification of any provision of this Agreement shall be effective unless in writing and signed by the party against whom such waiver, amendment or modification is sought to be enforced. No consent by either party to, or waiver of, a breach by either party shall constitute a consent to or waiver of any other different or subsequent breach by either party.

3.18 **Severability.** If any provision of this Agreement shall be unenforceable or invalid under any applicable law or be so held by any court of competent jurisdiction, the remaining provisions of this Agreement shall remain in full force and effect. The parties agree to use their best efforts to amend the unenforceable or invalid provision so as to best accomplish the objective of such provision and the parties. Any such amendment shall be in writing and be executed with the same formality as this Agreement.

3.19 **Notice.** Any notice or other communication required or permitted hereunder shall be in writing, and will be deemed given when delivered personally, sent by commercial overnight courier (with written verification of receipt) or sent by registered or certified mail, return receipt requested, postage prepaid, when the return receipt is received. All communications to Customer shall be sent to the attention of James L. Ley, County Administrator, 1660 Ringling Blvd., 2nd Floor, Sarasota, FL 34236; and to the Honorable Kathy Dent, Sarasota County Supervisor of Elections, P.O. Box 4194, Sarasota, FL 34230. All communications to ES&S shall be sent to the attention of the person listed on the signature to this Agreement and at the address set forth on such signature page unless other names or addresses are provided by ES&S.

3.20 **Disputes.**

a. **Payment Disputes.**

i. **Payment of Undisputed Amounts.** In the event of a dispute between the parties regarding (1) a product or service for which payment has not yet been made to ES&S, (2) the amount due to ES&S for any product or service, or (3) the due date of any payment, Customer shall timely pay all other undisputed amounts to ES&S. Such payment shall not constitute a waiver by Customer or ES&S of any of its rights and remedies against the other party.

ii. **Remedies for Past Due Undisputed Payments.** If any undisputed payment to ES&S is past due more than 30 days, ES&S may suspend performance under this Agreement until such amount is paid. To the extent permitted by law, ES&S hereby reserves a security interest in the Equipment and Third Party software which will not be satisfied until either the

ES&S Equipment, Third Party Items purchased by ES&S, and ES&S Software Products have been returned to ES&S or ES&S has been paid for the ES&S Equipment, ES&S Software Products licenses and Third Party Items. Customer shall, upon request by ES&S, execute financing statements deemed necessary or desirable by ES&S to perfect such security interest. Customer authorizes ES&S to file a copy of this Agreement or a financing statement with the appropriate authorities at any time after the Effective Date in order to perfect ES&S' security interest. A financing statement may be filed by ES&S without Customer's signature on the basis of this Agreement where permitted by law. Customer shall keep the Equipment and Third Party software in good working order and repair until it has paid for the ES&S Equipment, ES&S Software Products licenses and Third Party Items. If Customer's payment is past due for more than sixty (60) days, and is undisputed, ES&S may, with demand and notice to Customer, declare the total amount immediately due and payable. If Customer fails to pay the full amount after ten(10) business days of receiving such notice, then Customer agrees to peacefully and immediately deliver any Equipment and Third Party Software to which ES&S is entitled, to ES&S at Sarasota County, Florida. When ES&S has either received the Equipment, Software or Third Party Items purchased by ES&S or been paid for the ES&S Equipment, ES&S Software Products licenses and Third Party Items, it will release any retained security interest or financing statements that are of record within thirty (30) days of receipt.

b. **Dispute Resolution Process.** Time is of the essence in resolving disputes. The initiating party shall notify the responding party of any dispute, including all relevant information (e.g., the nature of the dispute, dates, times, persons involved). The responding party shall respond to the notification within ten (10) business days. Thereafter, the parties shall use their good faith efforts to resolve the dispute within a reasonable period of time. If the parties are unable to do so, either party may notify the other that it intends to submit the dispute to mediation within thirty (30) days after the notice is given. If the dispute is submitted to mediation, the mediation shall be conducted in Sarasota County, Florida by a trained, licensed and experienced mediator with no relationship to either party and who is otherwise acceptable to both parties, in their reasonable discretion. If the parties are unable to resolve their dispute through mediation, either may litigate the dispute in any court of competent jurisdiction, which litigation must occur in Sarasota County, Florida, and ES&S submits to the jurisdiction of said court and agrees to accept service of process. Notwithstanding anything in this Section 3.20(b) to the contrary, either party may apply to any court of competent jurisdiction located in Sarasota County, Florida, for a temporary restraining order and/or preliminary injunction at any time, and ES&S expressly submits to the jurisdiction of said court and agrees to accept service of process.

3.21 **Construction.** As used in this Agreement, "including" means "including without limitation". The singular shall include the plural and vice versa. The title of each Article, Section, Exhibit and Schedule is inserted solely for convenience of reference and shall not constitute a part of this Agreement, nor shall they affect the meaning, construction or effect of this Agreement.

3.22 **Counterparts; Execution By Facsimile.** This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but which together shall constitute one and the same instrument. The parties may execute this Agreement and exchange counterparts of the signature pages by means of facsimile transmission, and the receipt of such executed counterparts by facsimile transmission shall be binding on the parties. Following such exchange, the parties shall, within 5 (five) business days, exchange original versions of such signature pages.

3.23 **Affirmative Action.** ES&S represents that it has developed and implemented an Affirmative Action Plan and Equal Employment Opportunity policy in its workplace. ES&S shall provide copies of such documents to Customer upon request.

3.24 Price Stabilization. The Customer and/or the Sarasota County Supervisor of Elections reserves the right to purchase, and ES&S agrees to sell, additional ES&S Equipment at the prevailing market price or at the same per-unit contract price, which ever is less, for a period not to exceed three (3) years from the Effective Date.

3.25 Other. In performing its obligations or enjoying its rights under this Agreement, each party shall comply with all applicable laws and regulations. ES&S is providing Equipment, Software and services to Customer as an independent contractor, and shall not be deemed to be a "state actor" for purposes of 42 U.S.C. § 1983. ES&S will not be responsible for errors that arise from user errors, voter errors or problems encountered by individuals in voting that are not covered by warranty or for which ES&S is not otherwise responsible for under this Agreement. ES&S may engage subcontractors to provide certain of the Equipment, Software or services, but shall remain fully responsible for such performance. The provisions of Sections 2.2(d), 2.4, 2.8, 3.3(d), 3.5-3.11, 3.13, 3.14(b), 3.16, 3.20 and 3.24 of these General Terms shall survive the termination of this Agreement, to the extent applicable.

[END OF GENERAL TERMS]

**EXHIBIT A
PRICING SUMMARY**

Sale Summary:		
Description	Refer to	
ES&S Equipment	Exhibit B	\$4,471,425
ES&S Software Products License Fees	Exhibit C	\$48,000
Third Party Items	Exhibit D	\$28,500
Election Support Services	Exhibit E	\$131,700
Shipping and Handling		\$0
Estimated Performance Bond Cost (Actual to be billed)		\$69,664
Total Before Discounts		\$4,749,289
Early Adopter Discount		\$(35,375)
Total Net Sale		\$4,713,914
Terms & Conditions:		
Note 1: Any applicable state and local taxes are not included, and are the responsibility of the Jurisdiction.		
Note 2: Payment terms are as follows: \$513,500.00 within thirty (30) days of delivery of an equivalent amount of ES&S Equipment. Forty-five percent (45%) of Total Net Sale less \$513,500.00 thirty (30) days after delivery of all ES&S Equipment, ES&S Software Products and Third Party Items, installation and integration, acceptance testing and acceptance as set forth in Section 3.3. Forty-five percent (45%) of Total Net Sale within ten (10) days after Customer's receipt and review of the performance bond to be delivered to ES&S within ninety (90) days after the Effective Date (as provided for in Section 3.1). Ten percent (10%) of Total Net Sale within thirty (30) days after training as per Exhibit E of key election office personnel, including the Supervisor of Elections and poll workers.		
Note 3: ES&S will provide free on-site training sessions for the Sarasota County Supervisor of Elections and staff, as requested, through December 31, 2002. Such training shall be equivalent to the training provided by ES&S at its Election Management Training Center ("EMTC") in Omaha, Nebraska. Subsequently, ES&S will provide training sessions at one of its EMTCs, when and as requested, at its then current rate. Customer shall be responsible for all expenses it incurs in sending personnel to this training.		
Note 4: Election Support Services in excess of those set forth in Exhibit E shall be charged at the rate of \$900 per day, plus expenses through December 31, 2003. Expenses are limited to those allowed pursuant to Chapter 112, Florida Statutes		
Warranty:		
ES&S Hardware & ES&S Software Products warranty period: from the date of acceptance (as per Section 3.3(a) of the General Terms) through December 31, 2004.		

EXHIBIT B

ES&S EQUIPMENT DESCRIPTION AND PRICING

QUANTITY	DESCRIPTION	TOTAL UNDISCOUNTED PRICE	TOTAL DISCOUNTED PRICE
3	Model M150, including: (1)		
3	Scanner		
3	Ballot Boxes		
3	Cart/Table		
3	Start-up Kit		
3	Dust Cover		
3	Ballot Joggers		
	IVotronic, including:		
1,200	Voter Terminal (includes booth & PEB)		
200	ADA Voter Terminal (includes booth & PEB)		
15	Supervisor Terminal (includes PEB)		
190	Communication Pack w/ modem & thermal printer		
		\$4,516,425.00	\$4,471,425.00
	TOTAL		

(1) It is agreed to by ES&S and the Customer that, upon successful certification, two (2) Model 650's will substituted for three (3) Model 150's at no additional cost.

EXHIBIT C
ES&S SOFTWARE PRODUCTS DESCRIPTION AND PRICING

NUMBER OF LICENSES	DESCRIPTION	FEE PER LICENSE	UNDISCOUNTED LICENSE FEES	DISCOUNTED LICENSE FEES
1	Unity Election System licensed pursuant to Section 2.2(a) of the General Terms (check modules being licensed):			
X	Data Manager	\$100		
X	Ballot Image Manager	\$2,900		
	Ballot on Demand	-0-		
X	Hardware Programming Manager	\$44,000		
X	Data Acquisition Manager	\$6,800		
X	Reporting Manager	\$7,200		
1	ES&S Firmware Version(s): M150: version 1.3.3 (1) iVotronic: version 6.1.3.1	N/A; ES&S Firmware license fee included in the total cost of the ES&S Equipment		
	Total License Fees (including all applicable Documentation)		\$60,000	\$48,000

Note: ES&S Firmware versions may change between execution of contract and first election usage due to ongoing certification of Updates.

(1) It is agreed to by ES&S and the Customer that, upon successful certification, the ES&S Firmware for two (2) Model M650's shall be substituted for three (3) Model M150's at no additional cost to the Customer.

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**EXHIBIT D
THIRD PARTY ITEMS**

Results Accumulation Network	
Windows NT4 File Server	Quantity
Dell PowerEdge 2400 - 1GHz with 512K Cache	1
256MB SDRAM (2X128 SDRAM DIMMS)	1
6 Bay Hot Pluggable Backplane	1
On-board PERC 2/Si w/64MB Cache Single Channel	1
Add-in Raid Card, RAID 1 Hard Drive Configuration	1
18GB U160, SCSI 1In, 10K RPM Hard Drive - 1st	1
18GB U160, SCSI 1In 10K RPM Hard Drive - 2nd	1
48X IDE CD-ROM	1
56K Internal Modem	1
3.5" 1.44MB Floppy Drive	1
Microsoft Mouse	1
3 Year Next Bus. Day On-site Parts & Labor	1
PowerVault 100T 20/40G Internal DDS4 w/no Controller Card	1
Windows NT4 Software -- 10 users	1
56K Internal Modem	1
Arcserve Professional Software for Dell PowerSuite	1
APC Smart UPS-1400 w/Powerchute Software	1
DATA ACQUISITION WORKSTATIONS (2):	
Dell OptiPlex GX110 MiniTower -- 1GHz P-III w/256K Cache	2
Must have 1 ISA Slot	2
256MB Non-ECC SDRAM (2 DIMM)	2
Performance 104 key Keyboard	2
20 GB EIDE Hard Drive	2
P780 17" Ultra Monitor	2
12/8/32 CD/RW Drive	2
Intel Pro/100+ Management Adapter w/Wake on LAN	2
3.5" 1.44MB Floppy Drive	2
Windows NT4 or Windows 2000 using FAT 32	2
APC Back-UPS 500 VA	2
MS System Mouse	2
Isobar 6 Ultra Surge Protector (Tripp Lite)	1
U.S. Robotics 56K External Modem	1
3-Year Next Bus. Day On-Site Parts and Labor	2
Serial Cables (Modems)	1
PcAnywhere Communications Software	1

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November 8, 2001 2:21 PM Election Systems & Software, Inc.

Master Purchase Agreement - Exhibit D

DATA REPORTING/DISPLAY WORKSTATIONS:	
Dell OptiPlex GX110 MiniTower - 1GHz P-III w/256K Cache	4
Must have 1 ISA Slot	4
256MB Non-ECC SDRAM (2 DIMM)	4
Performance 104 Key Keyboard	4
20 GB EIDE Hard Drive	4
P780 17" Ultra Monitor	4
12/8/32 CD/RW Drive	4
Intel Pro/100+Management Adapter w/Wake on LAN	4
3 Year Next Bus. Day On-site Parts & Labor	4
3.5" 1.44MB Floppy Drive	4
APC Back-UPS 500 VA	4
MS System Mouse	4
Isobar 6 Ultra Surge Protector (Tripp Lite)	4
Windows NT4 or Windows 2000 using FAT 32	
PRINTER:	
Hewlett-Packard 8100N 32 PPM Laser Printer	1
MISC. NETWORK HARDWARE:	
D-Link 8 Port Ethernet Hub (DSH-8)	1
D-Link 16 Port Ethernet Hub (DSH-16)	1
Cisco 1602 Router / WAN (56K Frame Relay)	2
TOTAL THIRD PARTY ITEMS	
	\$28,500

Note 1:

The configuration and specification of Third Party Items as per this Exhibit D are subject to change by the manufacturer. Should the actual configuration and specifications as set by the manufacturer differ from those set forth herein, ES&S agrees to provide Third Party Items that are comparable to those described above and are mutually satisfactory to both parties.

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**EXHIBIT E
ELECTION SUPPORT SERVICES**

1. Term. The services described herein shall be provided for the following elections (the "Elections"):

March 2002 (1 st Election Use)
September 2002 Primary
November 2002 General

Provided, however, that this Exhibit E may be terminated prior to its expiration pursuant to the same provisions as are set forth in Section 3.14 of the General Terms of the Agreement.

2. Services. The election support services to be provided by ES&S, the concurrent obligations of Customer, key pricing assumptions, and fees are described below (*insert "N/A" if not applicable*). Customer acknowledges that ES&S' fees for election support services are based on certain key assumptions, and that a change in any key assumption may require ES&S to change the resulting fee charged to Customer. All travel expenses are subject to Florida Statutes, Chapter 112.

Service	Description	Key Assumptions	Projected No. of Days of Service Provided for			Fee
			March 2002 Election	Sep 2002 Election	Nov 2002 Election	
Project Management	A project manager shall be responsible for the coordination of all election support services, and shall be the primary Customer contact for questions/issues.	Fee reflects \$900 per day. Expenses calculated pursuant to Ch.112, F.S. not included	35	20	30	\$76,500
Ballot Production	Provide sample, test and official ballots to be used during Election. Customer will provide all specifications, including election information, to ES&S. ES&S will provide Customer with a proof of each type of ballot on the date specified in a timetable supplied by Customer, and Customer will approve such proofs in writing within 3 calendar days after delivery. Following Customer's approval, ES&S will print and deliver the ballots on the date specified in Customer's timetable.	To be negotiated separately	N/A	N/A	N/A	N/A
Ballot Layout/Coding Services	Creation of the ballot layout to be used by the ES&S Equipment. Customer will provide the election definition information to ES&S, and ES&S will process the information	Customer to assume responsibility for this task	N/A	N/A	N/A	N/A

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	into a usable format. The election definition files are then defined, used to code the election and transferred to the ES&S Equipments' memory devices. All Customer-created files shall remain the property of Customer.					
Installation and Integration	Provided by ES&S Representative at Customer's site on a mutually agreed-upon date; includes unpacking, inspection, setting up, diagnostic testing and calibration of the ES&S Equipment. Customer will prepare its site and hardware, software and systems not provided by ES&S as per ES&S' instructions, and will make its employees available to assist ES&S as reasonably necessary.	ES&S will train and oversee Customer personnel on the unpacking, inspection, setting up, diagnostic testing and calibration of the ES&S Equipment	15	5	5	\$30,000
Pollworker Training	Provide the Documentation and training. Training will include "train the trainer", pollworker and tabulation system & operator training at Customer's site. Pollworker training includes system overview, setup, operations, troubleshooting and a question/answer session. Tabulation training includes conducting or assisting in the training of Customer personnel in the operation of the ES&S Equipment and ES&S Software Products.		15	0	0	No Charge
Supplies	ES&S will provide the following supplies to Customer: _____ Ballot layout WAV files _____ _____ _____	To be negotiated separately	N/A	N/A	N/A	To be negotiated separately
Election Day Support of ES&S Equipment and ES&S Software Products	Assistance, if necessary, in the conduct of logic and accuracy testing. On-site support of pollworkers in the use of ES&S Equipment at the polling places (includes opening polls, handling unit problems, closing of polls, etc.) and supporting the central accumulation of results by ES&S Software Products.	2 ES&S representatives for 3 days per election @ \$1400 per rep/per day	6	6	6	\$25,200
Total Fees for Election Support Services						\$131,700

3. **Acknowledgements.** The parties acknowledge and agree as follows:

- a. Time is of the essence in performing their respective obligations hereunder. Customer's remedies for any failure by ES&S to timely provide election support services is set forth in Section 3.5 of the General Terms. Notwithstanding anything in the remainder of the Agreement to the contrary, if ES&S becomes

aware of any failure by Customer to timely perform its obligations under this Exhibit E, or reasonably believes that such failure may occur, it will immediately notify Customer. ES&S may refuse to provide any services if Customer fails to timely cure such failure of performance or provide adequate assurances of performance within 5 business days after receiving such notification. Any such refusal by ES&S will not constitute a breach of this Agreement.

- b. The Elections will be conducted under Customer's direction and control. ES&S will provide services based on information and instructions provided to it by Customer.
- c. Unless otherwise agreed to by the parties in this Agreement or a separate written agreement, ES&S will not provide any election support services to Customer which are not specifically described in this Exhibit E or elsewhere in this Agreement.
- d. In the event that actual election support service days for any particular Election are less than the projected number of days set forth above, Customer shall not be required to pay for the unused days. If Customer has previously paid for the unused days, ES&S shall refund such payment to Customer.

4. **Approval of Project Manager.** ES&S designates Gary L. Greenhalgh, DRE Systems Specialist, as the ES&S Project Manager for Sarasota County. The Customer has selected ES&S to perform the services contemplated under this Agreement based, in part, on the past successful experience and expertise of Mr. Greenhalgh. Accordingly, ES&S agrees that it shall not, absent good cause, replace or remove Mr. Greenhalgh as Project manager for Sarasota County without prior approval of the Customer. If Mr. Greenhalgh should resign his position as Project Manager or otherwise cease his employment with ES&S, ES&S shall not appoint a successor Project Manager without the prior approval of the Customer. If the Customer, in its sole discretion, determines that the Project Manager is performing his management and, in turn, the operation and maintenance responsibilities of ES&S under this Agreement in an unsatisfactory manner or irreconcilable differences or an unworkable relationship between the Project Manager and the Customer shall arise, ES&S, upon notice by the Customer of such circumstance, shall promptly replace such Project Manager with a successor acceptable to the Customer; provided, however, the Customer represents that it will not give such notice to ES&S unless and until the Customer, in its sole discretion, has exercised reasonable efforts to rectify to its satisfaction, the adverse circumstances regarding the Project Manager.

[END OF EXHIBIT E]

FOR INFORMATIONAL PURPOSES ONLY**EXHIBIT F
HARDWARE MAINTENANCE SERVICES
(POST-WARRANTY PERIOD)**

1. **Term; Termination.** This Exhibit F shall be in effect from the date on which the Warranty Period expires until the first anniversary thereof (the "Exhibit F Term"). The Exhibit F Term shall automatically renew for an unlimited number of successive one-year periods until this Exhibit F is terminated by the first to occur of (a) Customer's election to terminate it at any time, which shall be given at least 60 days prior to the termination date, (b) the date which is 30 days after either party notifies the other that it has materially breached this Exhibit F, if the breaching party fails to cure such breach (except for a breach pursuant to subsection (c), which will require no notice), or (c) the date which is 30 days after Customer fails to pay any amount due to ES&S under this Exhibit F. The termination of this Exhibit F shall not relieve Customer of its liability to pay any amounts due to ES&S hereunder.

2. **Services.** Subject to the terms and conditions of this Exhibit F, ES&S shall provide the following to Customer (check all that apply):

_____ The Routine Maintenance Services and Remedial Maintenance Services described in Section 3 of this Exhibit F with respect to the products listed on Schedule F1 (the "Products") (collectively the "Hardware Maintenance Services").

_____ Product Parts Only, as described in Section 4 of this Exhibit F.

3. **Maintenance Services.** If Customer elects to receive Hardware Maintenance Services pursuant to Section 2 above, such Hardware Maintenance Services shall be subject to the following terms and conditions:

a. **Inspection.** If Customer has elected not to receive Hardware Maintenance Services under this Exhibit F for at least a 12-month period, ES&S may require Customer to allow it to inspect the Products before it provides any Hardware Maintenance Services therefore. The purpose of such inspection shall be to determine whether or not the Products are fit for the ordinary purposes for which they are to be used, normal wear and tear excepted ("Normal Working Condition"). The cost of such inspection will be at the current published ES&S rate and shall be due from Customer within 30 days of its receipt of ES&S' invoice therefore. If any of the Products is not in Normal Working Condition, ES&S, at the option of Customer, (i) shall provide such repairs and replacements as it deems reasonable and necessary to restore such Product(s) to Normal Working Condition, at Customer's expense with respect to the cost of any parts used in such repairs or replacements and with respect to ES&S' Out-Of-Pocket Expenses, or (ii) shall not provide any Hardware Maintenance Services with respect to such Product(s). For purposes of this Exhibit F, "Out-Of-Pocket Expenses" shall mean all travel, meal and lodging expenses incurred by ES&S employees or authorized representatives ("ES&S Representatives") who are required to travel to Customer's Designated Location to provide services.

b. **Routine Maintenance Services.** An ES&S Representative shall provide such services as may be necessary to keep the Products in Normal Working Condition ("Routine Maintenance Services") once each 12 months during the Exhibit F Term or any renewal thereof. Customer may request that Routine Maintenance Services be performed more than once during any such 12-month period. Any such request shall be made at least 60 days before the Routine Maintenance Services are desired. The per-unit fee for such additional Routine Maintenance Services is set forth on Schedule F1 and shall be due within 30 days after invoice. Routine Maintenance Services shall include cleaning, lubrication and

calibration services. At the request of Customer, ES&S shall provide a reasonably detailed record of all Routine Maintenance Services performed with respect to one or more Products. ES&S will schedule the Routine Maintenance Services with Customer. The Routine Maintenance Services will be provided either at Customer's Designated Location or at an ES&S-designated depot facility ("Depot"), as elected by Customer on Schedule F1. Customer shall pay all costs associated with shipping Product(s) to a Depot, including insurance.

c. Remedial Maintenance Services.

- i. Defects Under Normal Use and Service. If a defect or malfunction occurs in any Product while it is under normal use and service, Customer shall promptly notify ES&S, and ES&S shall use reasonable efforts to restore the Product to Normal Working Condition as soon as practicable. The services provided by ES&S pursuant to this Subsection 3(c)(i) are referred to herein as "Remedial Maintenance Services". ES&S shall provide the Remedial Maintenance Services at its Depot; provided, however, that if Remedial Maintenance Services are required for 10 or more Products at any given time, Customer may elect to have them provided at its Designated Location; provided, further, that all Remedial Maintenance Services provided for central count equipment shall be provided at Customer's Designated Location. Customer acknowledges that Product(s) identified on Schedule F1 as "depot repair only" may only be repaired at a Depot.
- ii. Defects Due to Customer Actions or Omissions. If a defect or malfunction occurs in any Product due to (1) repairs, changes, modifications or alterations not authorized or approved by ES&S, (2) accident, theft, vandalism, neglect, abuse or use which is not in accordance with instructions or specifications furnished by ES&S or (3) causes beyond the reasonable control of ES&S or Customer, including natural disaster, fire, flood, unusually severe weather or Acts of God, or if Customer does not notify ES&S within 24 hours after it knows of the defect or malfunction or is otherwise not in compliance with its obligations hereunder, Customer shall pay ES&S for the Remedial Maintenance Services at ES&S' then-current rates, as well as for the cost of all parts used in connection with such Remedial Maintenance Services.
- iii. Timing. The date(s) on which any Remedial Maintenance Services shall be provided shall be mutually agreed upon by ES&S and Customer. If Customer requires ES&S to provide "emergency" Remedial Maintenance Services (which shall be defined as Remedial Maintenance Services which are provided within 48 hours after Customer notifies ES&S of the need therefor), and such emergency Remedial Maintenance Services are not needed as a result of an action, error or omission by ES&S, Customer shall pay a surcharge, as set forth on Schedule F1.
- iv. Loaner Unit. At Customer's request, ES&S shall use reasonable efforts to promptly make available to Customer a product which is the same as, or substantially similar to, the Product for which Remedial Maintenance Services are being performed (a "Loaner Unit"). If the Remedial Maintenance Services are being performed pursuant to Subsection 3(c)(ii) above, Customer shall pay ES&S for the use of the Loaner Unit at ES&S' then-current rates including the cost of shipping.
- d. Exclusions. ES&S has no obligation under this Exhibit F to (i) assume the obligations under any existing or expired warranty for a Third Party Item; (ii) repair or replace Product components which are consumed in the normal course of operating the Product, including printer ribbons, paper rolls, batteries, removable memory packs, cancellation stamps, ink pads or red stripe pens, or (iii) repair any ES&S Equipment from which the serial number has been removed or altered. In addition, ES&S may, at any time in its discretion, determine that any Product is no longer fit for Hardware Maintenance Services because it is in such poor condition that it cannot practically be restored to Normal Working Condition, or cannot be restored to Normal Working Condition at an expense which is less than the

then-current value of the Product. If such a determination is made, ES&S shall no longer be required to provide Hardware Maintenance Services for such Product. ES&S shall also refund to Customer an amount equal to (1) that portion of the most recent fee paid for Hardware Maintenance Services which is attributable to such Product, multiplied by (2) a fraction, the numerator of which is the remaining number of days in the Exhibit F Term or renewal period for which such fee was paid and the denominator of which is the total number of days in such Exhibit F Term.

- e. **Sole Provider; Access.** Customer shall not permit any individual other than an ES&S Representative to provide maintenance or repairs with respect to the Products for so long as an Exhibit F Term is in effect. Customer shall provide ES&S Representatives with all information necessary to enable them to provide Hardware Maintenance Services. Customer shall likewise provide full access to the Products and adequate working space for all Hardware Maintenance Services performed at its Designated Location, including sufficient heat, lights, ventilation, electric current and outlets.
- f. **Storage.** Customer shall properly store the Products when they are not in use.

4. **Product Parts Only.** If Customer has elected in Section 2 of this Exhibit F to receive Product Parts Only and not to receive Hardware Maintenance Services, it shall notify ES&S when it needs parts. When ES&S receives such notice, it shall promptly ship such parts to Customer at its own expense and shall bear all risk of loss or damage to the parts until they are delivered to the Designated Location. Customer is responsible for installing the parts. All replaced parts are the property of ES&S, and Customer shall ship them to ES&S at its own expense and bear all risk of loss or additional damage until they are delivered to ES&S. All parts shall be supplied by ES&S to Customer subject to their availability at such time, and pursuant to the most recent list of available parts published by ES&S. All parts shall be either (a) new standard parts, or (b) certified rebuilt parts which are of a quality sufficient to enable the Products to operate, assuming they are otherwise in Normal Working Condition. At ES&S' request, Customer shall store a reasonable number of parts for the Products at its Designated Location. ES&S agrees that it shall maintain spare parts for each item of ES&S Equipment for a minimum of 3 years following the date on which ES&S ceases to manufacture such item.

5. **Fees.** In consideration for ES&S' agreement to provide Hardware Maintenance Services or Product Parts Only under this Exhibit F, Customer shall pay to ES&S a fee for the initial Exhibit F Term and each renewal period. Such fee shall be in addition to any fees or charges separately referred to in any Section of this Exhibit F or the Agreement. The fee for the initial Exhibit F Term is set forth on Schedule F1 and Exhibit A and is due on the date of the expiration of the Warranty Period. ES&S may increase the fee for a renewal period by not more than 5% of the amount of the most recent fee paid by Customer. ES&S shall notify Customer of such increase no later than 60 days before the commencement of such renewal period. Increases in excess of 5% will be mutually agreed upon by ES&S and Customer. The fee for any renewal period shall be due and payable no later than 30 days prior to the beginning of such renewal period.

[END OF EXHIBIT F]

FOR INFORMATIONAL PURPOSES ONLY

Schedule F1

DESCRIPTION OF PRODUCTS

Quantity	Description (Note: *** indicates Depot Repair Only Products)	Initial Maintenance Fee Per Unit	Initial Maintenance Fee In Total	Product Parts Only Fee ("N/A" if Hardware Maintenance Services Provided)
	Total Fees Due For Initial Term			

Per-Unit Fees if Customer requests more than one Routine Maintenance visit in a year: \$ _____

Surcharge for Emergency Remedial Maintenance Services: \$ _____

Customer's _____ Designated _____ Location: _____

Location of Services:

- ☐ Customer's Designated Location
☐ Depot

Equipment Maintenance Fees for years subsequent to the Warranty Period shall be as follows:

Year	First Month Applicable	iVotronic	M150	M650
1		\$ per unit	\$ per unit	\$ per unit
2		\$ per unit	\$ per unit	\$ per unit
3		\$ per unit	\$ per unit	\$ per unit

FOR INFORMATIONAL PURPOSES ONLY**EXHIBIT G
SOFTWARE MAINTENANCE AND SUPPORT
(POST-WARRANTY PERIOD)**

6. **Term; Termination.** This Exhibit G shall be in effect from the date on which the Warranty Period expires until the first anniversary thereof (the "Exhibit G Term"). The Exhibit G Term shall automatically renew for an unlimited number of successive one-year periods until this Exhibit G is terminated by the first to occur of (a) Customer's election to terminate it at any time, which shall be given at least 60 days prior to the termination date, (b) the date which is 30 days after either party notifies the other that it has materially breached this Exhibit G, if the breaching party fails to cure such breach (except for a breach pursuant to subsection (c), which will require no notice), or (c) the date which is 30 days after Customer fails to pay any amount due to ES&S under this Exhibit G. The termination of this Exhibit G shall not relieve Customer of its liability to pay any amounts due to ES&S hereunder.

7. **Services Provided.** ES&S shall provide maintenance and support services for the ES&S Software ("Software Maintenance and Support"), to enable it to perform in accordance with its Documentation in all material respects, and to cure any defect in material or workmanship.

8. **Updates.** During the Exhibit G Term and any renewals thereof, ES&S shall continue to provide Updates in the manner described in, and subject to the terms and conditions of, Section 2.6(a) of the General Terms.

9. **Reinstatement of Software Maintenance and Support.** If the Exhibit G Term or any renewal thereof expires without being renewed, Customer may thereafter resume receiving Software Maintenance and Support upon (a) notification to ES&S, (b) payment of all fees which would have been due to ES&S had the Exhibit G Term not expired, and (c) the granting to ES&S of access to the ES&S Software, so that ES&S may analyze it and perform such maintenance as may be necessary before resuming the Software Maintenance and Support.

10. **Conditions.** ES&S shall not be obligated to provide Software Maintenance and Support for any item of ES&S Software if such item requires such services due to (a) repairs, changes, modifications or alterations not authorized or approved by ES&S, (b) accident, theft, vandalism, neglect, abuse or use which is not in accordance with instructions or specifications furnished by ES&S, (c) causes beyond the reasonable control of ES&S or Customer, including natural disaster, fire, flood, unusually severe weather or Acts of God, or (d) Customer's failure to install and use the most recent Update, or the second most recent Update, provided to it by ES&S. ES&S shall likewise not be obligated to provide Software Maintenance and Support if Customer does not notify ES&S within 24 hours after it knows of the need for such services or is otherwise not in compliance with its obligations under this Agreement.

11. **Fees.**

- a. **In General.** In consideration for ES&S' agreement to provide Software Maintenance and Support under this Exhibit G, Customer shall pay to ES&S a

Maintenance Fee for the initial Exhibit G Term and each renewal period. The Maintenance Fee shall be comprised of (i) a fee for the Software Maintenance and Support provided for the ES&S Firmware, and (ii) a fee for the Software Maintenance and Support provided for all other ES&S Software, and shall be in addition to any fees or charges separately referred to in any Section of this Exhibit G or this Agreement. The Maintenance Fee for the initial Exhibit G Term is set forth on Exhibit A and is due on the first day of the Exhibit G Term. If Customer elects, pursuant to Section 2.6(b), to receive Software Maintenance and Support for an Add-On or New Product during the Exhibit G Term or any renewal thereof, ES&S will charge an incremental Maintenance Fee for such services. In its sole discretion, ES&S may increase the Maintenance Fee for a renewal period by not more than 5% of the amount of the most recent Maintenance Fee paid by Customer. ES&S shall notify Customer of such increase no later than 60 days before the commencement of such renewal period. Increases in excess of 5% will be mutually agreed upon by ES&S and Customer. The Maintenance Fee for any renewal period shall be due and payable no later than 30 days prior to the beginning of such renewal period.

- b. **Specified.** Software Maintenance and Support Fees for years subsequent to the Warranty Period shall be as follows:

Year	First Month Applicable	Fee -ES&S Firmware	Fee- All Other ES&S Software
1		\$	
2		\$	
3		\$	

12. **Proprietary Rights.** ES&S shall own the entire right, title and interest in and to all corrections, programs, information and work product conceived, created or developed, alone or with Customer or others, as a result of or related to the performance of this Exhibit G, including all proprietary rights therein or based thereon. Subject to the payment of the Maintenance Fee, ES&S hereby grants to Customer a non-exclusive license to use that portion of such corrections, programs, information and work product that ES&S actually delivers to Customer pursuant to this Exhibit G. All licensed items shall be deemed to be ES&S Software for purposes of this Agreement. Except and to the extent expressly provided herein, ES&S does not grant to Customer any right, license, or other proprietary right, express or implied, in or to any corrections, programs, information, or work product covered by this Agreement.

END OF EXHIBIT G

**EXHIBIT H
DEFINITIONS**

- a. "Documentation" means the operating instructions, user manuals or training materials for the Equipment and Software.
- b. "Equipment" means ES&S Equipment and Third Party hardware or equipment.
- c. "ES&S Equipment" means ES&S' proprietary hardware or other equipment.
- d. "ES&S Software Products" means ES&S' proprietary election software (including the ES&S Firmware), all Updates and items delivered to Customer, unless licensed pursuant to a separate written agreement, all Add-Ons and New Products licensed to Customer.
- e. "GAAP" means United States generally accepted accounting principles, as in effect from time to time.
- f. "Software" means ES&S Software Products and Third Party software.

Tab 17

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

Case No.: 2006 CA 2973

vs.

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA; SARASOTA COUNTY
CANVASSING BOARD; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; VERN BUCHANAN, as
nominee of the Republican Party for Representative in
Congress from the State of Florida's Thirteenth
Congressional District; and ELECTION SYSTEMS
& SOFTWARE, INC.,

Defendants.

ELLEN FEDDER, LANCE JONES,
ERNEST LASCHE a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, CHARLES CLIFTON,

Plaintiffs,

Case No.: 2006 CA 2996

vs.

TOM GALLAGHER, CHIEF
FINANCIAL OFFICER, *et al.*

Defendants.

**PLAINTIFF JENNINGS' OPPOSITION TO DEFENDANT ELECTION SYSTEMS &
SOFTWARE, INC.'S MOTION FOR FIFTEEN DAYS RESPONSE TIME AND AN
EVIDENTIARY HEARING**

Plaintiff Jennings respectfully submits her opposition to Defendant Election Systems & Software, Inc.'s ("ES&S's") Motion Requesting Fifteen (15) Days to Respond to Plaintiff's Motions and Request for Evidentiary Hearing and its Supplemental Arguments in Support of that Motion. Defendant has shown no compelling need for additional time to respond to Plaintiff's motions. Indeed, as of the hearing set before this Court on December 15, 2006, Defendant ES&S will have been allowed the same amount of time to respond as all of the other defendants in this case -- fifteen (15) days. Moreover, Defendant has not shown any reason why this Court should hold a full-day evidentiary hearing. The only conceivable reason for holding such a hearing would be to show that materials constitute trade secrets. But Plaintiff has conceded for purposes of her motion to compel the source code from the State Defendants that the ES&S source code is a trade secret. Thus, there is no need for expert, or other testimony. Should the Court desire to hear such testimony, however, the time already reserved on December 15, 2006 is more than adequate.

I. DEFENDANT ES&S IS BEING AFFORDED THE SAME AMOUNT OF RESPONSE TIME AFFORDED ALL OTHER DEFENDANTS.

Defendant ES&S alleges that it is not being afforded the same amount of response time that this Court granted the other defendants in its November 21, 2006 Order to respond to Plaintiff Jennings' requests for production. This is incorrect as set forth below.

- On November 30, 2006, Plaintiff Christine Jennings filed her First Amended Complaint, adding ES&S as a Defendant. As is customary, Plaintiff sought to serve that complaint on ES&S's registered agent in the State of Florida.
- However, anticipating that service of the Complaint on the registered agent might take some time, Plaintiff's counsel provided Defendant ES&S's counsel with copies of the Complaint via email on November 30, 2006.
- On that same date, Plaintiff's counsel also provided Defendant ES&S's counsel with copies of Plaintiff's Motion to Compel and Motion for Entry of a Protective Order.
- On that same date, four attorneys for Defendant ES&S participated in a phone call with Plaintiff's attorneys to discuss discovery issues.

Thus, Defendant's statement in Paragraph Seven of its Motion that "plaintiff did not serve ESS with either motion despite plaintiff's recent designation of ESS as a party in the amended complaint" is obviously false. Plaintiff's counsel Mark Herron provided copies of these motions via e-mail to Defendant ES&S's counsel Miguel DeGrandy and Harry Thomas at 4:37 PM on November 30, 2006. *See* Herron E-Mail (attached hereto as Exhibit A). Counsel for ES&S responded by thanking Plaintiff's counsel for the materials. *See id.* Given that Defendant is well aware of the exigencies of time in this election contest proceeding, it is inappropriate for Defendant ES&S to suggest that it did not have notice of the motions simply because its registered agent had not yet been formally served.¹

¹ Defendant conveniently relegates its admission that it did, in fact, receive the referenced motions and pleadings to a footnote in its supplemental motion advocating delay.

Further, it is utterly implausible for ES&S to suggest that it was somehow unaware of Plaintiff's requests for production and powerless to address them until it was formally served by Plaintiff on December 4, 2006. Under ES&S's contract with Sarasota County, "[i]n the event that a demand is made upon . . . the Sarasota County Supervisor of Elections for disclosure of materials or information considered by ES&S to be 'confidential,' 'proprietary,' or a 'trade secret,' the Sarasota County Supervisor of Elections . . . shall notify ES&S as soon as possible and ES&S shall immediately take all actions it deems necessary to defend itself against such disclosure." ES&S Contract at 9 (attached hereto as Exhibit B). Thus, as set forth in own contract, ES&S presumably has been aware of these issues since Plaintiff's November 20, 2006 request for production directed to Sarasota County. ES&S could at any time have taken "all actions it deem[ed] necessary to defend itself." *Id.*

Plaintiff has noticed a hearing on her Motion to Compel and Motion for Entry of a Protective Order for December 15, 2006. At that point, Defendant ES&S will have had fifteen days to respond to these motions, which ES&S counsel indisputably received on November 30, 2006. Fifteen days is the same amount of time this Court afforded all other Defendants for a response in its Order of November 21, 2006. Defendant ES&S has shown no compelling need for the additional response time and its request should be summarily denied.

II. DEFENDANT ES&S HAS SHOWN NO NEED FOR A FULL-DAY EVIDENTIARY HEARING.

Defendant ES&S claims that a full-day evidentiary hearing is required "on the issue of whether plaintiff is entitled to ESS' Source Code and Proprietary Equipment." ES&S Motion at 6. There is no need for such a hearing. Nor is there any cause for concern about any alleged due

process rights of Defendant. *See Goodyear Tire & Rubber Co. v. Jones*, 929 So. 2d 1081, 1085 (Fla. 3d DCA 2005) (rejecting an argument that vacating a confidentiality order without holding an evidentiary hearing and in-camera inspection of materials violated due process). Certainly, an evidentiary hearing is often necessary when a court is attempting to determine whether certain materials constitute trade secrets. *See, e.g., Uniroyal Goodrich Tire Co. v. Eddings*, 673 So. 2d 131, 132 (Fla. 4th DCA 1996); *Lovell Farms, Inc. v. Levy*, 641 So. 2d 103, 105 (Fla. 3d DCA 1994). But here, Plaintiff has conceded for purposes of her motion that ES&S's source code constitutes a trade secret. Thus, there is no need for any expert testimony as to this topic.

The only remaining issues are: (1) whether Plaintiff has shown a reasonable necessity for the requested materials, *see Sheridan Healthcorp, Inc. v. Total Health Choice, Inc.*, 770 So. 2d 221, 222 (Fla. 3d DCA 2000); and (2) whether the protective order proposed by Plaintiff adequately shields ES&S from any potential harm, *see American Express Travel Related Servs., Inc. v. Cruz*, 761 So. 2d 1206, 1209 (Fla. 4th DCA 2000). Neither of these issues requires a full-day evidentiary hearing.

As to the first issue, Plaintiff demonstrated in her First Amended Complaint and the Declaration of Professor Dan S. Wallach attached thereto that access to the source code is necessary for Plaintiff to conclusively determine the cause of the software bug that caused the machine malfunction in the Sarasota County November 2006 general election. To the extent that Defendant's motion challenges Plaintiff's showing of reasonable necessity, Plaintiff has provided a supplemental declaration from Professor Wallach, attached hereto as Exhibit C. These declarations are more than sufficient to provide the Court with information about Plaintiff's reasonable necessity for the requested materials while the Court is considering the "relevant factors which must be weighed before deciding the competing interests of the respective parties." *Beck v. Dumas*, 709 So. 2d 601,

603 (Fla. 4th DCA 1998). Showing reasonable necessity is a plaintiff's burden, and although a plaintiff *may* request an evidentiary hearing in order to make its showing, *see id.*, it is not *required* to do so. Here, Plaintiff is content to rest on its pleadings, the declarations attached thereto, *and* the argument of counsel, for this Court to make a determination and enter a finding that Plaintiff has demonstrated a reasonable necessity for the requested materials. *Cf. id.*

As to the second issue regarding any possible harm to ES&S, Plaintiff has proposed a routine protective order similar to those used in cases involving trade secrets all of the time. As this Court stated in the hearing on November 21, 2006, "there are generally ways to get around the public becoming aware of what is in the source code. I'm aware of that, and you all know it, too." *See* Hrg. Tr. at 42 (attached hereto as Exhibit D). It is difficult to fathom what further light a full-day evidentiary hearing might shed on this Court's already well-formed awareness of protective orders and the case law regarding them. *See Grooms v. Distinctive Cabinet Designs, Inc.*, 846 So. 2d 652, 655 (Fla. 2d DCA 2003) (recognizing that trade secrets can be produced if disclosure is "carefully regulated to ensure no improper use of the information"); *Seta Corp. of Boca, Inc. v. Office of Attorney General*, 756 So. 2d 1093, 1094 (Fla. 4th DCA 2000) ("[C]ourts can order disclosure of trade secrets so long as protections are taken to see that they are not disclosed to competitors."); *Home Depot U.S.A., Inc. v. Bencsik*, 697 So. 2d 232, 233 n.1 (Fla. 5th DCA 1997) (noting that a "customary protective order of confidentiality would be sufficient to obviate [an] objection" based on the "commercial sensitivity of . . . documents"). If Defendant ES&S objects to certain provisions in Plaintiff's proposed protective order, Plaintiff is more than willing to work with Defendant to amend the proposed order such that Plaintiff will be able to obtain the access it needs while at the same time

protecting Defendant's proprietary information. There is no need for an evidentiary hearing on this issue.

III. THE TIME RESERVED ON DECEMBER 15TH IS ADEQUATE FOR ANY EVIDENTIARY HEARING.

Notwithstanding the foregoing, should this Court wish to hold an evidentiary hearing to take testimony regarding Plaintiff's reasonable necessity for the requested materials, the time that Plaintiff has already reserved on the Court's calendar on December 15, 2006 is sufficient for such a hearing. Plaintiff would present the testimony of Professor Wallach, who would essentially restate the substance of his declaration. Defendant has retained Professor Michael C. Herron, who states in his declaration attached to Defendant's supplemental filing, that he has been asked to consider whether the undervotes cast in Sarasota County are due to ballot design. Professor Herron has already written and posted on the internet a 60-page paper of his findings regarding the Sarasota County general election, entitled "Ballot Formats, Touchscreens, and Undervotes: A Study of the 2006 Midterm Elections in Florida." See <http://www.dartmouth.edu/~herron/cd13.pdf>. The initial draft of this paper was posted on November 23, 2006, and the most recent draft on December 3, 2006. See *id.* Thus, any suggestion that Professor Herron would not be prepared to testify on December 15, 2006 because he needs time to familiarize himself with the issues is inherently suspect.

More fundamentally, however, Professor Herron's testimony about ballot design would be putting the cart before the horse. Defendant is seeking to litigate the merits of the case before resolving the threshold issues that are before the Court at this point. As outlined above, the only issues for the Court's consideration at this stage are whether Plaintiff has shown a reasonable necessity for the requested materials and whether the protective order proposed by Plaintiff will

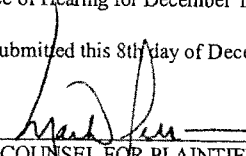
adequately protect ES&S's interests. These issues can certainly be covered in the time allotted for hearing on December 15, 2006.

As this Court is well aware, this case is assigned priority status under Florida's election-contest statute, which expressly sets expedited deadlines for filing complaints, filing answers, holding hearings, and taking testimony. *See* Fla. Stat. § 102.168(2), (6), (7). As of December 15, 2006, twenty-five days will have elapsed since Plaintiff first filed her election contest proceeding. Given the statute's command to hold an "immediate hearing" and the typically expedited discovery granted in election contest cases, *see Jacobs v. Seminole County Canvassing Bd.*, 2000 WL 1720698 (Fla. Cir. Ct. 2000), no further delay is warranted. ES&S's motion to postpone these proceedings, when it has already been afforded the same amount of response time as all other defendants, should be summarily rejected.

CONCLUSION

For the foregoing reasons, Plaintiff respectfully requests that this Court deny Defendant ES&S's Motion Requesting Fifteen (15) Days to Respond to Plaintiff's Motions and Request for an Evidentiary Hearing and the Supplemental Arguments submitted in support thereof, as well as its request that this Court strike Plaintiff's Notice of Hearing for December 15, 2006.

Respectfully submitted this 8th day of December, 2006 by:


COUNSEL FOR PLAINTIFF JENNINGS

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From: Mark Herron
To: Harry Thomas ; Miguel De Grandy
Date: 11/30/2006 4:37:11 PM
Subject: Jennings v. Elections Canvassing Commission

Both cases are on the high profile cases portion of the Second Judicial Circuit website.

Attached are the pertinent filings in the case to date:

1. Jennings original complaint with attachments and motion for expedited discovery / requests for production.
2. Secretary of State opposition to expedited discovery and attachments.
3. Order on motion for expedited discovery
4. Hearing transcript: November 21, 2006.
5. Amended complaint. We seeking to serve ES&S's registered agent in Weston.
6. Motion to Compel - Division of Elections.
7. Motion for Productive Order / Proposed Protective Order.

Hopefully, these documents will be of assistance to you. If you need anything else, let me know.

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EXHIBIT A

A-361

From: "Miguel De Grandy" <mad@degrandylaw.com>
To: "Mark Herron" <mherron@lawfla.com>
Date: 11/30/2006 4:45:09 PM
Subject: RE: Jennings v. Elections Canvassing Commission

Thanks Mark

-----Original Message-----

From: Mark Herron [mailto:mherron@lawfla.com]
 Sent: Thursday, November 30, 2006 4:37 PM
 To: Miguel De Grandy; Harry Thomas
 Subject: Jennings v. Elections Canvassing Commission

Both cases are on the high profile cases portion of the Second Judicial Circuit website.

Attached are the pertinent filings in the case to date:

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Hopefully, these documents will be of assistance to you. If you need anything else, let me know.

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ELECTION SYSTEMS & SOFTWARE, INC.
VOTER TABULATION SYSTEM AND SERVICES AGREEMENT

CONTRACT NO.
BGC APPROVED 11/13/01

This Agreement is made as of the date it is executed by the last of the parties named below on the signature page (the "Effective Date").

BETWEEN: Election Systems & Software, Inc., a Delaware corporation ("ES&S"), whose address is: 11208 John Galt Blvd., Omaha, Nebraska 68137,

AND: The County of Sarasota, Florida ("Customer"), a political subdivision of the State of Florida, whose address is: 1660 Ringling Blvd., 2nd Floor, Sarasota, Florida 34236.

RECITALS:

- A. Customer has agreed to purchase/license voter tabulation equipment and related software and services from ES&S for use in Sarasota County, FL (the "Jurisdiction"). The terms and conditions under which the equipment, software and services shall be provided are set forth in the GENERAL TERMS attached hereto and incorporated herein by reference.
- B. The following Exhibits are incorporated into, and constitute an integral part of, this Agreement (check all that apply):
- X Exhibit A (Pricing Summary)
 - X Exhibit B (ES&S Equipment)
 - X Exhibit C (ES&S Software Products)
 - X Exhibit D (Third Party Items)
 - X Exhibit E (Election Support Services)
 - Exhibit F (Hardware Maintenance Services)
 - Exhibit G (Software Maintenance Services)
 - X Exhibit H (Definitions)

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, each of the parties hereto:

- Agrees to the GENERAL TERMS and the terms and conditions set forth in each applicable Exhibit.
- Agrees that at all times, this Agreement shall be governed by and construed in accordance with the laws of the State of Florida.
- Represents and warrants to the other party that as of its signature date indicated below it has full power and authority to enter into and perform this Agreement, and that the person signing below on its behalf has been properly authorized to execute this Agreement.
- Acknowledges that it has read this Agreement, understands it and intends to be bound by it.

[Signature Page to Follow]

<p>ATTEST:</p> <p>KAREN E. RUSHING Clerk of Circuit Court Ex-Officio Clerk of the Board of County Commissioners of Sarasota County, Florida</p> <p>By: <u>[Signature]</u> Deputy Clerk</p>	<p>BOARD OF COUNTY COMMISSIONERS OF SARASOTA COUNTY, FLORIDA</p> <p>By: <u>[Signature]</u> Chairman</p>
<p>WITNESSES:</p> <p><u>[Signature]</u> (Signature) Deborah A. Koperski (Print Name)</p> <p><u>[Signature]</u> (Signature) Beverly J. Cavanaugh (Print Name)</p>	<p>ELECTION SYSTEMS & SOFTWARE, INC.</p> <p>By: <u>[Signature]</u> CFO</p>
<p>Approved as to form and correctness:</p> <p><u>[Signature]</u> County Attorney KH</p>	

a. ES&S owns the ES&S Software Products, all Documentation and training materials provided by ES&S, the design and configuration of the ES&S Equipment and the format, layout, measurements, design and all other technical information (except for Customer supplied information such as election information) associated with the ballots to be used with the ES&S Equipment. Customer has the right to use the aforementioned items to the extent specified in this Agreement. ES&S likewise owns all patents, trademarks, copyrights, trade names and other proprietary or intellectual property in, or used in connection with, the aforementioned items. The aforementioned items also contain confidential and proprietary trade secrets of ES&S which are protected by law and are of substantial value to ES&S. ES&S acknowledges that Customer and Sarasota County Supervisor of Elections retain all proprietary rights to all data collected by Customer and/or Sarasota County Supervisor of Elections as a result of conducting elections and tabulating and reporting election results in the Jurisdiction, including all voter demographic data and voting statistics.

b. Customer shall not knowingly cause or permit the adaptation, conversion, reverse engineering, disassembly or de-compilation of any of the ES&S Equipment or ES&S Software Products.

c. Customer shall keep the ES&S Software Products and related Documentation free and clear of all claims, liens and encumbrances and shall maintain all copyright, trademark, patent or other intellectual or proprietary rights notices which are set forth on the ES&S Equipment, the ES&S Software Products, the Documentation, training materials and ballots which are provided, and all permitted copies of the foregoing.

3.9 **Confidentiality.** As a political subdivision of the State of Florida, Customer agrees that any and all information and the materials provided by ES&S hereunder that are marked "confidential," "proprietary," or "trade secret" and which are not required to be made publicly available under public records laws, or any other laws of the State of Florida or the United States of America, will be kept confidential by Customer. Customer and the Sarasota County Supervisor of Elections shall not be liable for any damages suffered by ES&S as a result of any disclosure of ES&S materials pursuant to law. ES&S shall mark any materials or information that it considers to be "confidential," "proprietary," or a "trade secret." In the event that a demand is made upon Customer or the Sarasota County Supervisor of Elections for disclosure of materials or information considered by ES&S to be "confidential," "proprietary," or a "trade secret," the Sarasota County Supervisor of Elections or Customer shall notify ES&S as soon as possible and ES&S shall immediately take all actions it deems necessary to defend itself against such disclosure, provided that ES&S may not take action that would effect (a) the ability of Customer to operate the System; or (b) the obligations of ES&S under this agreement. In the case of any action brought against the Sarasota County Supervisor of Elections and/or Customer pursuant to Florida Statutes Chapter 119 or other law, ES&S shall either (a) defend the Sarasota County Supervisor of Elections and/or Customer in any such action or (b) reimburse the Sarasota County Supervisor of Elections and/or Customer all fees and costs incurred in defense of such action. For the purpose of this paragraph "action" includes proceedings at the trial and the appellate levels.

3.10 **Indemnification by ES&S.**

a. **Intellectual Property Infringement.** ES&S will indemnify, defend and hold Customer and/or the Sarasota County Supervisor of Elections harmless from and against any and all damages, amounts paid in settlement and reasonable fees and costs (including reasonable attorneys fees) (collectively "Adverse Consequences") arising out of or relating to a claim that any of the ES&S Equipment or ES&S Software Products infringes upon any third party's United States patent existing as of the date hereof or United States copyright, trademark or trade secret (a "Third Party Infringement Claim"). Notwithstanding the foregoing, ES&S shall have no liability to Customer for any Third Party Infringement Claim resulting out of any acts, errors or omissions of Customer, resulting from (i)

**DECLARATION OF DAN S. WALLACH
DECEMBER 7, 2006**

1. I, Dan S. Wallach, declare under penalty of perjury, that the following is true and correct.

2. I am an associate professor in the department of computer science at Rice University. I am also the associate director of ACCURATE (A Center for Correct, Usable, Reliable, Auditable, and Transparent Elections), which is a research center funded by a \$7.5 million grant from the National Science Foundation and which studies technological and policy issues with electronic voting systems. I earned my M.A. and Ph.D. in computer science at Princeton University and my B.S. in electrical engineering and computer science at the University of California, at Berkeley.

3. On behalf of the Jennings campaign, I have been asked to analyze the source code to the ES&S iVotronic, in an effort to determine whether any software bugs or other design flaws in these voting machines may have contributed to the unusually high undervote rate in Florida's 13th Congressional District in the recent election.

4. At the present time, there are two main hypotheses that might explain the unusually high undervote rate: the **human factors hypothesis** and the **software flaw hypothesis**. The former considers that some aspect of the ballot design may have confused large numbers of voters into skipping over the Congressional race on their ballot. The latter considers that voters may in fact

EXHIBIT C

have properly indicated their votes but that some software flaw may have misinterpreted the voters' intent.

5. A fundamental pre-condition to discovering a software flaw is having access to the software in which such flaws might exist. Normally, software exists in two forms: source code, which is written by software engineers in a programming language such as C++ or Java, and binary or object code, which is largely unintelligible to humans but which is directly executed by the computer. For the purposes of discovering software flaws, source code is vastly preferable to object code, as it can be directly read and interpreted by human observers.

6. ES&S points out that their source code is a trade secret owned by them — a fairly common position among software vendors. However, a copy of that code is also held under escrow by the State of Florida for purposes including forensic examination, such as I might conduct to determine whether the software played a role in the unusual undervote rate.

7. I have worked as an expert in past legal challenges with software considered to be proprietary and trade secret including, in *Uniloc v. Microsoft* (a patent infringement case), code that Microsoft considers so sensitive that most of its own developers are never allowed to see it. Naturally, a vendor such as ES&S has a proprietary interest in protecting its intellectual property from its competitors, and I would be willing to abide by an appropriate protective order, under the authority of this Court, that would stipulate that my analysis would be confined to issues that relate to the undervote rate in the recent election, and that I would take appropriate steps to protect my copy of the ES&S source code.

8. ES&S has filed a motion with the Court requesting a delay while they and their expert prepare a response to Jennings' motion to compel discovery of ES&S's source code, as held under escrow by the State of Florida. ES&S also states that their expert, Prof. Michael Herron, needs until December 15 to produce his own report on the undervote rate. Herron has already circulated drafts of his analysis, and other analyses have also been performed by other political scientists, including Jennings' expert (MIT professor Charles Stewart).

9. Herron's current draft report states that his statistical analysis cannot distinguish between the human factors hypothesis and the software flaw hypothesis. Given the voting records that Herron wishes to analyze, there will be no possible way for him to distinguish between which of the two hypotheses may best explain the unusual undervote rate. Ultimately, the only way we might definitely determine the answer is to study the software. Without such a study, we can never adequately rule out any influence that software flaws may have induced.



DAN S. WALLACH

Date: December 7, 2006

1 of the Supervisor of Elections. As far as any tests they
2 are going to conduct Tuesday, that is great, but I do want
3 the Supervisor to make available an opportunity for the
4 experts of either candidate, the Plaintiff or Mr. Buchanan,
5 to be there, observe. And I'm sure we will be addressing it
6 again, because whatever they do is going to be unacceptable
7 to somebody. But it may answer the question, too. I'm sure
8 hoping it will.

9 Your request for everything to take place by tomorrow
10 is totally out of order. I'm denying your motion to
11 expedite it, however I'm going to require the Defendants to
12 respond to discovery within 15 days.

13 As far as the source code, I'm denying your motion
14 without prejudice. I think ES&S needs an opportunity to be
15 heard. If they are heard, you may get that source code.
16 There is generally ways to get around the public becoming
17 aware what is in the source code. I'm aware of that, and
18 you all know it, too.

19 I think you ought to see if you can work something out
20 on the discovery, but I have a feeling within 15 days we're
21 going to have another hearing, just a wild guess. You do
22 respond to the complaint within ten days. I believe that is
23 the statute. And I believe 106 also rests venue here in
24 Leon County.

25 What have I missed?

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing was delivered by facsimile or electronic transmission and U.S. Mail on this 8th day of December, 2006, to:

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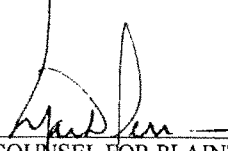
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Tab 18

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

ELLEN FEDDER, LANCE JONES,
ERNEST LASCHE a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, CHARLES CLIFTON,

Plaintiffs,

v.

No. 06 CA 2996

TOM GALLAGHER, CHIEF
FINANCIAL OFFICER, STATE OF
FLORIDA, and GOVERNOR JEB
BUSH, and STATE SENATOR DAN
WEBSTER, as members of and as the
FLORIDA ELECTIONS CANVASSING
COMMISSION, and SUE M. COBB,
as SECRETARY OF STATE,
STATE OF FLORIDA,

and

THE SARASOTA COUNTY
CANVASSING BOARD,
SARASOTA COUNTY JUDGE
PHYLLIS GALEN, SARASOTA
COUNTY COMMISSIONER
PAUL MERCIER, and KATHY
DENT, SARASOTA COUNTY
SUPERVISOR OF ELECTIONS,
as members of and as THE
SARASOTA COUNTY
CANVASSING BOARD, and KATHY
DENT, as Supervisor of Elections,

and

VERN BUCHANAN, Nominee of
the Republican Party of Florida for
the 13th Congressional District of Florida,

Defendants.

**VOTER PLAINTIFFS' JOINDER TO JENNINGS' MOTION TO COMPEL,
AND VOTER PLAINTIFFS' MOTION TO COMPEL,
AND OPPOSITION TO ESS MOTION FOR ADDITIONAL TIME**

Plaintiffs Ellen Fedder, Lance Jones, Ernest Lasche a/k/a Mike Lasche, Barbara Klein, Lois Harmes, John Minder, Dovie Murray, John McBride, Susan Gaar, Gary Lamer, and Charles Clifton (collectively, "Voter Plaintiffs") hereby join Plaintiff Jennings' Motion to Compel Production of Items Within the Custody and Control of the State Under Fla. Stat. § 101.5607 and Fla. Admin. Code Rules 1S-2.015(5)(f), filed November 30, 2006 ("Jennings Motion to Compel"). In addition, Voter Plaintiffs move to compel the production of the materials sought in their own discovery requests and oppose voting equipment vendor Election Systems & Software ("ESS")' motion for additional time to respond.

Florida law unequivocally provides Florida voters with the right to bring an election contest to determine whether their voters were properly counted. A contest is appropriate where, as here, the election results contain unexplained and significant anomalies that appear to be attributable to voting machines and the Plaintiffs have presented facts to support their concern that their votes were not properly recorded. Defendants seek to prevent Florida voters from exercising this right by invoking expired warranties, inapplicable confidentiality agreements, and trade secrecy privileges that they do not themselves possess. This obstructionist approach is particularly troubling because time is of the essence in this dispute: the new Congressional session starts on January 3, 2007, and Florida voters deserve to have their lawfully elected representative seated as soon thereafter as possible.

Yesterday, on December 6, 2007, ESS sought an additional delay so that the parties may submit further evidence on a virtually undisputable question: whether an examination of the voting machines used in an election is reasonably necessary in an election contest prompted by the alleged failure of those machines to count the votes. It is, however, settled law that neither trade secrets nor confidentiality agreements may be used to “conceal fraud or otherwise work injustice.” While new technology may change some facets of elections and election contests, it should not and cannot prevent Florida voters from exercising their rights to bring and reasonably pursue an election contest.

Background

On November 20, 2006, Plaintiff Christine Jennings submitted a Request for Production of Documents and for Inspection of Tangible Things to the Florida Elections Canvassing Commission; the Sarasota County Canvassing Board; Kathy Dent, Sarasota County Supervisor of Elections; Sue Cobb, Florida Secretary of State; and Dawn Roberts, Director of the Florida Division of Elections (“Jennings Discovery Request”). In addition, Jennings moved to compel expedited discovery of the Election Systems & Software, Inc. (“ESS”) source code to the iVotronic system, to all elements of the Unity software suite, and to all personal electronic ballots (“PEBs”) as used in the November 2006 general election in Sarasota County and/or as escrowed with the Department of State under Section 101.5607(1)(a), Florida Statutes. On November 21, 2006, the Court denied Plaintiff’s request for production of the source code, without prejudice.

On November 30, 2006, Jennings filed her renewed Motion to Compel, arguing that the material sought was in the State’s possession, custody, and control (not ESS’s),

that the state has no basis to refuse the requested discovery, and that the entry of a protective order can adequately protect any concerns about trade secrets.

On December 1, 2006, Voter Plaintiffs issued their First Set of Requests For Production and Inspection (“Voter Discovery Request”) to Defendants Florida Elections Canvassing Commission; Sarasota County Canvassing Board; Sue M. Cobb, Florida Secretary of State; and Kathy Dent, Sarasota County Supervisor of Elections. The Voter Discovery Request explicitly seeks copies of access to all materials identified in the Jennings Discovery Request. The Voter Discovery Request also asks for additional materials, among them

- a) records of iVotronic voting machine malfunctions,
- b) communications regarding iVotronic voting machine malfunctions,
- c) studies regarding iVotronic security and reliability, and
- d) all data generated by iVotronic voting machines during the November 7, 2006, election.

A true and correct copy of the Voter Discovery Request is attached as Exhibit A.

On December 5, 2006, Defendants Election Canvassing Commission of the State of Florida, and Sue M. Cobb as Florida Secretary of State (collectively, “State Defendants”¹) issued their Response to the Jennings Discovery Request, refusing to produce responsive materials “to the extent that they seek documentation which is confidential and exempt trade secret (defined by § 812.081 and §§ 815.04 and 815.045, Florida Statutes (2006).” Specifically, State Defendants identified iVotronic source code

¹ Dawn K. Roberts, Director of the Division of Elections of the State of Florida, also joined in the State Defendants’ Response to the Jennings Discovery Request. Roberts is not a Defendant in the Voter Plaintiffs’ suit.

and related documentation, user manuals, operator manuals, training materials, and other documentation related to the use, operation, or maintenance of any part of the iVotronic system as categories of responsive materials which would be withheld in whole or in part based on this asserted “confidential” or “exempt trade secret” status.

Similarly, on December 5, 2006, Defendant Dent issued a Response to Plaintiff’s [Jennings’s] Request for Production of Documents and for Inspection of Tangible Things in which she refused to produce, in whole or in part, the following documents: software used in the November 7, 2006, election to test iVotronic voting machines and their components; user manuals, operator manuals, training materials, and other documentation related to the use, operation, or maintenance of any part of the iVotronic system; documentation necessary to extract and read iVotronic redundant memories; all files loaded onto an iVotronic machine as part of the “ballot programming” process; and the machines themselves. Ms. Dent asserts that such materials are exempt from production based on the contract between Sarasota County and ESS and/or that the materials are “proprietary trade secret matters” under section 90.506, Florida Statutes (2006).

In addition, on December 6, 2006, Defendant² ESS filed its own Motion (“ESS Motion”), seeking additional time to respond to Jennings’s Discovery Request and an evidentiary hearing to determine (among other things) whether Plaintiffs have a “reasonable necessity” to examine voting machine components as part of their election contest.

² Jennings added ESS as a Defendant in her Amended Complaint, filed on November 30, 2006. Voter Plaintiffs have not added ESS as a Defendant, but this Court consolidated both cases on November 30, 2006.

Because Voter Plaintiffs seek all of the same materials sought by Jennings in her motion to compel, and because the state Defendants have now refused to produce such responsive materials, Voter Plaintiffs join in the Jennings Motion and adopt Jennings' arguments in support thereof, with the following supplemental argument. In addition, because Voter Plaintiffs seek additional materials that will likely implicate the same contractual and trade secret concerns already raised by Defendants, Voter Plaintiffs move to compel those additional materials on similar grounds. As this Court is aware, this election contest must be resolved quickly and expeditiously. Voter Plaintiffs join in the Jennings motion increase the efficiency of this proceeding and to allow the Court to consider all related issues together.

Argument

I. Defendants May Not Assert Third Party Trade Secret Privilege In Order to Withhold Discovery.

No Defendant has objected to the relevancy of the materials sought in the Jennings Discovery Request (explicitly incorporated in the Voter Discovery Request). Not only is the information relevant, it is central to the case, which is aimed at discovering what happened during the November 2006 general election that led to over 18,000 unexplained undervotes in Sarasota County. Indeed, refusal to allow the Jennings and Voter Plaintiffs access to this material is tantamount to denying them their right to reasonably contest the election as provided under Florida law.

Defendant Dent and the State Defendants improperly object to production, without specificity or a privilege log, on the basis of a purported right of a third party, ESS. As discussed more fully in Jennings's Motion to Compel of November 30, 2006, any such argument limiting the production of relevant materials is for ESS to make,

whether or not ESS is a party to the action. Section 90.506 clearly states: the privilege may be claimed by the person or the person's agent or employee. Defendants are neither.

Even if ESS asserts that some or all of the materials sought by the Plaintiffs are trade secrets, such a designation is not automatic: "The burden is on the party resisting discovery to show 'good cause' for protecting or limiting discovery by demonstrating that the information sought is a trade secret or confidential business information and that disclosure may be harmful." *American Exp. Travel Related Services, Inc. v. Cruz*, 761 So.2d 1206 (Fla. 4th DCA 2000). This burden carries with it an obligation to identify any such materials with particularity on a privilege log; blanket objections – such as the ones put forward thus far – are insufficient.³

Further, "[i]t is widely recognized that the trade-secret privilege is not absolute." 8 Wigmore, Evidence § 2212(3) (McNaughton rev.1961); Law Revision Council Note to § 90.506 (1976). "The purpose of the [trade secret] privilege is to prohibit a party from using the duty of a witness to testify as a method of obtaining a valuable trade secret *when the lack of disclosure will not jeopardize more important interests.*" Law Revision Council Note to § 90.506 (1976) (emphasis added). Thus, the privilege may be invoked to prevent disclosure only "if the allowance of the privilege will not conceal fraud or

³ Florida Rule of Civil Procedure 1.280 requires parties withholding otherwise discoverable materials on the basis of a trade secret privilege to identify such materials with particularity in order to "enable other parties to assess the applicability of the privilege or protection." Trial courts have the discretion to find waiver of privilege claims for failure to produce a privilege log. *See, e.g., General Motors Corp. v. McGee*, 837 So.2d 1010, 1032 (Fla. 4th DCA 2002), *Metabolife Intern., Inc. v. Holster*, 888 So.2d 140, 141 (Fla. 1st DCA 2004). *See also Gosman v. Luzinski*, 937 So.2d 293, 296 fn.1 (Fla. 4th DCA 2006) ("Obviously, if the sole objection to discovery were that it sought privileged documents, then compliance with Rule 1.280(b)(5) would be required prior to any hearing on the objection as the information contained in the privilege log would be necessary to "assess the applicability of the privilege or protection").

otherwise work injustice.” Fla. Sta. § 90.506 (2006). In addition, the “necessity of disclosure to the presentation of the opponent's case” (among other factors) weighs against suspending the generally applicable discovery obligations. Law Revision Council Note to § 90.506 (1976). Finally, Florida courts recognize that the potential harm of disclosing trade secrets is lessened where, as here, the party seeking discovery lacks any commercial interest in the secret at issue. *See, e.g., Freedom Newspapers, Inc. v. Egly et al.*, 507 So.2d 1180 (Fla.App.Dist.2 1987).

Each of the above factors weighs in favor of production of the requested materials. As set forth in greater detail in Jennings’ Motion for Protective Order, the information sought by Plaintiffs is crucial to their case. Indeed, details regarding the operation and accuracy of the voting technology approved by the state of Florida and selected by Sarasota County are the very essence of this case. Moreover, Plaintiffs seek access to these relevant materials not for competitive gain but for purposes of explaining how thousands of Sarasota residents were apparently deprived what the Supreme Court has held as the “fundamental political right” – the right to vote. *Yick Wo v. Hopkins*, 118 U.S. 356, 370 (1886).

Voter Plaintiffs agree with Jennings that the issuance of a protective order should resolve any concerns that ESS may raise about the disclosure of materials it believes qualifies for trade secret protection. In the interests of expediting discovery, Voter Plaintiffs will abide by any protective order the Court initially determines is necessary “in the interests of the holder of the privilege, the interests of the parties, and the furtherance of justice.” Fla. Stat. § 90.506. *See also* Fla.R.Civ.P. 1.280(c)(7). However, recognizing that it is ESS’s burden to establish that all materials it seeks to designate as trade secrets

qualify as such, and the tremendous and appropriate public interest in understanding whether their votes were counted correctly, Voter Plaintiffs reserve the right to challenge any such designation after discovery has commenced.

II. Sarasota County's Contract With ESS Does Not Prohibit the Release of Materials Sought by Plaintiffs As Part of the Discovery Process.

In addition to improperly asserting a trade secret privilege on behalf of ESS, Defendant Dent insists that a contract with ESS prohibits production of certain responsive materials "without the written consent of ESS or proper court order." This argument is without merit.

First, no agreement between Sarasota County and ESS can be allowed to preclude those harmed by either of their actions from gaining access to materials that are reasonably calculated to lead to the discovery of admissible evidence. *See, e.g., Nestor v. Posner-Gerstenhaber*, 857 So.2d 953, 955 (Fla. 3d DCA 2003) (contractual confidentiality agreements cannot be used to adversely interfere with the ability of nonparties to pursue discovery); *Scott v. Nelson*, 697 So.2d 1300, 1301 (Fla. 1st DCA 1997) (contractual confidentiality agreements which suppress evidence violate public policy).

Second, the contract itself anticipates that materials designated "confidential," "proprietary," or "trade secret" by ESS might still be made available "under public records laws, or any other laws of the State of Florida or the United States of America." ESS Vendor Contract with Sarasota County (Exhibit B) at paragraph 3.9. Indeed, the contract specifically indemnifies Sarasota County for any "damages suffered by ESS as a

result of any disclosure of ESS materials pursuant to law.” *Id.*⁴ Even though this provision is not a prerequisite for discovery to commence, requests seeking materials central to Plaintiffs’ cause of action satisfy the contractual language.

Third, Dent misrepresents the contract between Sarasota County and ESS and the impact of permitted inspection. Dent asserts, for example, in paragraph 13 of her response that “[p]roviding the machines for any type of access, opening or inspection, will violate the warranty between Sarasota County and Election Systems & Software.” This is simply incorrect. Sarasota’s warranty expired in December of 2004. Exh. B at paragraph 3.3(b).

Dent goes on to ask that if the Court orders any such inspection that the Court also “should specify that parties receiving the items purchase the equipment, as such will be compromised by any actions by Plaintiff and are then unable to be used again by Sarasota County.” While the suggestion that a voter *must purchase* affected voting machines in order to maintain an election contest is absurd, Plaintiffs in this instance are willing to accede to Dent’s terms. If Dent is indeed offering to sell one or more of the iVotronic voting machines in question as a way of facilitating the discovery process, Voter Plaintiffs accept that offer. While in no way agreeing that such an arrangement is necessary under Florida law, Plaintiffs believe that in this particular case, especially given the need for expeditious review, it would likely streamline efforts to coordinate inspection as well as expedite and focus any trade secret arguments that ESS may intend to bring as part of this case.

⁴ The contract further sets forth specific procedures that are triggered if Sarasota County is subject to such a suit, procedures that result in ESS defending or reimbursing Sarasota County for “all fees and costs incurred in defense of such action.” *Id.*

III. ESS's Efforts to Delay Have No Basis and Should Be Rejected.

In its Motion of December 6, ESS argues that it needs additional time in which to decide what position to take regarding discovery production of materials for which it asserts trade secrecy. While Voter Plaintiffs are receptive to suggestions aimed at accommodating the legitimate scheduling needs of any party, ESS misrepresents both the law and the facts in support of a Motion that would ultimately only cause unnecessary delay and prejudice Plaintiffs.

A. ESS Was Not Prejudiced By Being Served With Jennings' Complaint on December 4.

Its careful insinuations notwithstanding, ESS never claims, nor does common sense support, that ESS was actually prejudiced by any lack of notice regarding the development of this contest. As the supplier of both election equipment and "election support services" for Sarasota County in the recent general election, ESS was no doubt aware of voter complaints regarding the performance of its voting equipment that began to emerge even before election day. Media scrutiny focusing on potential malfunctions of its voting machines increased dramatically when the margin of victory – and the undervote rate – of the 13th Congressional District was announced, leading the Secretary of State to call for an audit of ESS' equipment, an audit that by definition required consultation with and the participation of ESS itself. The likelihood of this lawsuit, and the corresponding need to evaluate ESS equipment and materials, was clear almost immediately after polls closed on November 7th.

Moreover, once the lawsuit was filed and Jennings submitted her initial discovery requests seeking access to source code and other related materials, Sarasota County was obligated by its contract to inform ESS of such an attempt: "In the event that a demand is

made upon Customer or the Sarasota County Supervisor of Elections for disclosure of materials or information considered by ESS to be “proprietary,” or a “trade secret,” the Sarasota County Supervisor of Elections or Customer shall notify ESS as soon as possible and ESS shall immediately take all actions it deems necessary to defend itself against such disclosure.” Exh. B. at paragraph 3.9.

ESS’ claims of prejudice amount to technical protestations, not a reflection of the actual notice that ESS had of Plaintiffs’ legitimate and predictable attempts to obtain and evaluate the underlying code of voting machines that reportedly malfunctioned during the election. Furthermore, ESS was obligated under its own contract to “immediately take all actions it deems necessary to defend itself against such disclosure” once made aware of a likely attempt at disclosure. The notion that ESS only *now* has begun to develop its position on trade secrets and source code disclosure or that it must now “retain its own experts” is, to be generous, not credible.

B. No Evidentiary Hearing – Let Alone a Full-Day of Expert Testimony– Is Necessary or Required.

With no party contesting trade secrecy status in order to facilitate the production of discoverable materials, Plaintiffs need only demonstrate a “reasonable necessity” for the information. *See, e.g., Goodyear Tire & Rubber Co. v. Cooley*, 359 So.2d 1200, 1202 (Fla. 1st DCA 1978).

As ESS’ own citations demonstrate, no evidentiary hearing is required to make this finding. In *Uniroyal Goodrich Tire Company v. Eddings*, 673 So.2d 131, 132 (Fla. 4th DCA 1996), for example, the court of appeals identified both an *in camera* hearing as well as an evidentiary hearing as valid mechanisms to determine trade secret status and, by implication, “reasonable necessity.” In *Rare Coin-It, Inc. v. I.J.E., Inc.*, 625 So.2d

1277, 1279 (Fla. 3rd DCA 1993), the court of appeals did not specify any required procedural mechanism from which such a finding need to emerge. Instead, Plaintiffs must simply make some factual showing that in turn permits the Court to “set forth findings of fact supporting a conclusion that disclosure of the trade secrets was reasonably necessary to resolve the issues in dispute.” *See, e.g., Virginia Electronics and Lighting Corp. v. Koester*, 714 So.2d 1164, 1165 (Fla. App. 1 Dist., 1998).

In the immediate case, the requisite factual showing has already been made. On November 20, 2006, in support of her Complaint, Jennings filed the Declaration of Dan Wallach, a nationally renowned computer security expert (and an associate director at ACCURATE, an federally-funded research center that studies technological and policy issues associated with electronic voting systems). In his Declaration, Wallach described in detail the materials that were required to perform an accurate audit of the voting technology and why those materials were necessary. Far from simply “rely[ing] on the argument of plaintiff’s counsel,” as incorrectly described by ESS, Plaintiffs have already made far more than the minimal factual showing required by Florida law.

ESS may, of course, submit written evidence of its own to rebut Wallach’s Declaration. However, a more expansive process like an evidentiary hearing is an unnecessary waste of the resources of the Court and the parties, for at least three reasons. First, the immediate case does not implicate a business competitor relationship between the parties, a situation in which courts tend to take greater care to ensure that overbroad discovery attempts don’t irreparably harm the producing party. *See, e.g., Beck v. Dumas*, 709 So. 2d 601 (Fla. 4th DCA 1998); *Rare Coin-It, Inc. v. I.J.E., Inc.*, 625 So.2d 1277 (Fla. 3rd DCA 1993).

Second, the only question before the Court is an extremely narrow one, the answer to which is self-evident: In an election contest alleging malfunctions of voting technology, is it reasonably necessary to examine that technology in order to determine whether any such malfunctions took place? This is not, as ESS argues, a situation requiring expert testimony – over the course of an entire day, no less – to walk the Court through the “highly technical nature of the Source Code and Proprietary Equipment.” ESS Motion at p.7. ESS experts may ultimately in their own declarations take the counter-intuitive position that such an examination is *not* relevant, but the Court is competent to evaluate such submissions (as well as the explanatory arguments of counsel) in order to determine whether Plaintiffs have met their low evidentiary burden. If the Court feels that it needs more evidence after reviewing those submissions, it can ask for it at that point. Tellingly, even though it argues that a full-day hearing is strictly required, ESS fails to articulate the contents, scope, or parameters of such a hearing.

Indeed, ESS’ own supplemental briefing, submitted today, suggests that the vendor seeks not to present evidence in support of the narrow “reasonable necessity” question but instead wants to weigh the merits of the case before discovery – an example of putting the cart before the horse if there ever was one. ESS argues that delay is appropriate to give the vendor’s expert time to “fully present his findings and conclusions” regarding his undervote theories. Such a presentation – and responsive testimony – should occur at trial, not a preliminary discovery hearing. Moreover, ESS is asking for the same thing Plaintiffs seek – the chance to develop claims and defenses based on relevant evidence. All parties should have that opportunity; only ESS seems to think it should have extra time to do so in advance of production.

Finally, the interests of justice weigh against saddling election contest plaintiffs with this higher evidentiary burden. The Florida trade secret privilege may not “conceal fraud or otherwise work injustice.” *See* § 90.506, Florida Statutes (2006). An election contest alleging the malfunction of voting equipment ordinarily protected by a trade secret privilege clearly triggers the policy considerations embodied in the statute.

Conclusion

For the reasons stated, Voter Plaintiffs respectfully request that the Court grant Jennings' Motion to Compel. In addition, Voter Plaintiffs respectfully request that the Court compel the production of all materials sought in the Voter Discovery Request. Furthermore, Voter Plaintiffs respectfully request that ESS's Motion be denied.

Respectfully submitted,

DATED: December 7, 2006

By 

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By: 
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IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

ELLEN FEDDER, LANCE JONES,
ERNEST LASCHE a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, CHARLES CLIFTON,

Plaintiffs,

v

No. 06 CA 2996

TOM GALLAGHER, CHIEF
FINANCIAL OFFICER, STATE OF
FLORIDA, and GOVERNOR JEB
BUSH, and STATE SENATOR DAN
WEBSTER, as members of and as the
FLORIDA ELECTIONS CANVASSING
COMMISSION, and SUE M. COBB,
as SECRETARY OF STATE,
STATE OF FLORIDA,

and

THE SARASOTA COUNTY
CANVASSING BOARD,
SARASOTA COUNTY JUDGE
PHYLLIS GALEN, SARASOTA
COUNTY COMMISSIONER
PAUL MERCIER, and KATHY
DENT, SARASOTA COUNTY
SUPERVISOR OF ELECTIONS,
as members of and as THE
SARASOTA COUNTY
CANVASSING BOARD, and KATHY
DENT, as Supervisor of Elections,

and

VERN BUCHANAN, Nominee of
the Republican Party of Florida for
the 13th Congressional District of Florida,

Defendants

EXHIBIT A

**PLAINTIFFS' FIRST SET OF
REQUESTS FOR PRODUCTION AND INSPECTION**

Pursuant to Rule 350 of the Florida Rules of Civil Procedure, Plaintiffs request that Defendants (the Florida Elections Canvassing Commission; Sarasota County Canvassing Board; Sue M. Cobb, Florida Secretary of State; and Kathy Dent, Sarasota County Supervisor of Elections) produce all Documents responsive to the following Requests for Production at the offices of undersigned counsel as soon as practicable and, in any event, within 15 days of the service of these Requests. Plaintiffs also request that Defendants make available for inspection as soon as practicable all things sought in their Requests for Inspection

INSTRUCTIONS

These requests require the production and/or inspection of all responsive materials within the sole or joint possession, custody, or control of any Defendants, including, without limitation, any such Documents that lie within the possession, custody, or control of any agents, agencies, departments, attorneys, employees, consultants, representatives, or other persons or entities acting for, or otherwise subject to the control of, any Defendants

2 These requests are continuing in nature and require prompt supplemental responses for any and all responsive Documents that come into any Defendant's sole or joint possession, custody, or control after the service of any initial responses

3 Each of these requests requires a separate answer. For each Document, indicate the Request to which it responds.

4. All responsive Documents are required to be produced either (a) as they are kept in the usual course of business (together with copies of any file labels or binder covers for the

files or binders in which they are maintained) or (b) organized and labeled to correspond with the categories of the Requests to which they respond (see Rule 1.350(b)).

5 For any responsive Document or portion thereof that is either redacted or withheld, in whole or in part, on the basis of any assertion of privilege or other asserted exemption from discovery, identify (a) the title or identity of the Document; (b) the date of the Document; (c) the type or nature of the Document; (d) the identity, title or responsibilities, and relationship to Defendants of all persons who either prepared or received the Document; (e) the type and nature of the privilege or exemption asserted; and (f) the contents or subject matter of the Document, with sufficient detail to explain the basis for the privilege or exemption asserted (see Rule 1.280(b)(5)). For any such responsive Document or portion thereof that may not properly be redacted or withheld in its entirety, produce each and every portion thereof to which the claimed privilege or exemption does not apply and specify, on the face of each such page or portion, the fact and reason for the redaction or withholding

6 Wherever possible or necessary to render a given Request more inclusive than it otherwise might be, the singular should be construed to include the plural, and vice versa; the disjunctive should be construed to include the conjunctive, and vice versa; and any verb tense should be construed to include other tenses.

DEFINITIONS

“Defendants” means any and all named Defendants in this action (except Vern Buchanan), both individually and jointly, their offices, subordinates, employees, agents and representatives

2. "Election official" means any employee, agent, or representative of Florida state or local government authorized to take part in (or otherwise participates in) the administration of any election held within Florida.

3. "Document" is used in the broadest sense permissible under the Florida Rules of Civil Procedure to encompass and mean the product of any method of recording information, whether by writing or otherwise, including without limitation: any written, electronic, or computerized files, data, or software; memoranda; correspondence; communications; records; reports; summaries; studies; analyses; evaluations; notes or notebooks; indices; logs; books, booklets, or binders; pamphlets; calendar or diary entries; press clippings; graphs; tables; charts; drawings; maps; meeting minutes; photographs; transcripts; audio or video recordings or tapes; facsimile transmissions; electronic mail messages; administrative decisions, orders, or rulings; and the like

The term "Document" should be construed to encompass all responsive Documents and related materials of any nature and each and every copy or draft of a Document that is not identical to the original or to any other copy or draft

4 The term "DRE" refers to direct recording electronic voting machines.

5 The term "OPSCAN" refers to optical scan voting machines.

6 The term "voting system" refers to the total combination of mechanical, electro-mechanical, or electronic equipment, and any ancillary equipment and software, firmware, and documentation required to program, control, and support the equipment, all of which is used to define ballots, cast and count votes, report and/or display election results, and maintain and produce any audit trail information. Only systems that utilize DRE or OPSCAN voting machines are included in this definition unless otherwise stated.

7 The term "ES&S" refers to Election Systems & Software, as well as the agents thereof. The term also refers to the entity and agents that provide technical assistance and support related to voting equipment.

8 The term "malfunction" refers to any event reported by anyone regarding any voting system or any component thereof indicating (1) that the voting system did not record or may not have accurately recorded a voter's vote, (2) that voters encountered difficulty using the voting system, (3) that voting system exhibited anomalous, unexpected, or unexpected behavior, or (4) that the voting system failed to properly perform any function for which it was certified under state or federal law.

9. Unless otherwise specified, "November 7, 2006, election" and "election of November 7, 2006" refers to the November 7, 2006, election in Sarasota County, Florida.

REQUESTS FOR PRODUCTION

Request for Production No.1.

All Documents responsive to the Plaintiff's [Christine Jennings] Request for Production of Documents and for Inspection of Tangible Things of November 20, 2006.

Request for Production No.2.

Documents sufficient to show the name, address, and job title of all employees and poll workers who participated in the administration of the November 7, 2006, election.

Request for Production No.3.

For the November 7, 2006, election, all Documents discussing, relating to, reflecting, or in any manner memorializing any reported voting system malfunction, including but not limited to Documents identifying any components that reportedly malfunctioned and any remedial action taken

Request for Production No.4.

For the November 7, 2006, election, all communications between and/or among Defendants, ES&S, election officials, or poll workers regarding the malfunction of any voting system.

Request for Production No. 5.

All Documents prepared by or for, or considered or relied upon, by any Defendant regarding the security, reliability, or accuracy of any DRE or OPSCAN voting system used or considered for use in Florida since January , 2000.

Request for Production No.6.

All data generated by all voting machines used in the November 7, 2006, election, including but not limited to ballot images, data stored in redundant or backup memory, and audit data.

REQUESTS FOR INSPECTION

Request for Inspection No.1

Plaintiffs request access to and the right to inspect all tangible things identified in Plaintiff's [Christine Jennings] Request for Production of Documents and for Inspection of Tangible Things of November 20, 2006

Dated: December 1, 2006

Respectfully submitted,

Zaina N. Salam /mz

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Attorney for County Commissioner Paul Mercier


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1st day of December, 2006 to the following:

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Sarasota County Canvassing Board
101 S. Washington Blvd.
Sarasota, FL 34236

By:


Matthew J. Zimmerman

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

ELLEN FEDDER, LANCE JONES,
ERNEST LASCHE a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, CHARLES CLIFTON,

Plaintiffs,

v

No. 06 CA 2996

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FINANCIAL OFFICER, STATE OF
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and

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SARASOTA COUNTY
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Defendants

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Dated: December 1, 2006

Respectfully submitted,

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Sarasota County Canvassing Board
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By:


Matthew J. Zimmerman

IN THE DISTRICT COURT OF APPEAL
FIRST DISTRICT OF FLORIDA
CASE NO. _____
LT NO. 2006 CA 2973

CHRISTINE JENNINGS, as nominee of the Democratic Party
for Representative in Congress from the State of Florida's
Thirteenth Congressional District,

Petitioner,

v.

ELECTIONS CANVASSING COMMISSION OF THE STATE OF FLORIDA;
SARASOTA COUNTY CANVASSING BOARD;
KATHY DENT, as SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE STATE OF FLORIDA;
DAWN K. ROBERTS, as DIRECTOR OF THE DIVISION OF ELECTIONS
OF THE STATE OF FLORIDA;
VERN BUCHANAN, as nominee of the Republican Party for Representative in Congress
from the State of Florida's Thirteenth Congressional District; and
ELECTION SYSTEMS & SOFTWARE, INC.,

Respondents.

APPENDIX TO EMERGENCY PETITION FOR A WRIT OF CERTIORARI
VOLUME 2 OF 2

On Petition for a Writ of Certiorari to the Circuit Court of the Second Judicial Circuit,
in and for Leon County
Honorable William L. Gary

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Tab 19

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs.

Case No. 2006 CA 2973

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA; SARASOTA COUNTY
CANVASSING BOARD; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; VERN BUCHANAN, as
nominee of the Republican Party for Representative in
Congress from the State of Florida's Thirteenth
Congressional District; and ELECTION SYSTEMS
& SOFTWARE, INC.,

Defendants.

ELLEN FEDDER, LANCE JONES
ERNEST LASCHE a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, and CHARLES CLIFTON,

Plaintiffs,

vs.

Case No. 2006 CA 2996

TOM GALLAGHER, CHIEF
FINANCIAL OFFICER, *et al.*,

Defendants.

FILED
CIRCUIT CIVIL DIV.
06 DEC -7 PM 12:49
CLERK OF CIRCUIT COURT
LEON COUNTY, FLORIDA



PLAINTIFFS' JOINT NOTICE
SETTING A DECEMBER 15, 2006 CASE MANAGEMENT CONFERENCE,
REQUESTING PROMPT ENTRY OF A SCHEDULING ORDER,
AND SEEKING PRIORITY STATUS
UNDER FLA. R. JUD. ADMIN. 2.215(g) AND 2.545(c)

To establish the parameters of discovery at the earliest opportunity, and to move toward a just, speedy, and inexpensive resolution of these consolidated cases, pursuant to Florida Rule of Civil Procedure 1.200, the *Jennings* and *Fedder* Plaintiffs (hereafter "Plaintiffs") jointly request a Case Management Conference to be held in the Tallahassee courtroom of The Honorable Judge William L. Gary on Friday morning, December 15, 2006, as well as entry promptly thereafter of a Scheduling Order governing discovery and pretrial procedures.

This case is assigned priority status under Florida's election-contest statute, which expressly sets expedited deadlines for filing complaints, filing answers, holding hearings, and taking testimony. Fla. Stat. § 102.168(2), (6), (7). And this particular election contest concerns a public office whose term will commence in just four weeks, on January 4, 2007, and will expire only 24 months later. The Florida Rules of Judicial Administration therefore require that this case be "appropriately advanced on the docket," be given "priority in scheduling consistent with its priority case status," and be "expedite[d] . . . to the extent reasonably possible." Fla. R. Jud. Admin. 2.215(g), 2.545(c).

Under Florida Rule of Civil Procedure 1.200(a), a Case Management Conference can be "convene[d]" at "any time after responsive pleadings or motions are due." Because the *Fedder* Plaintiffs' complaint and the *Jennings* Plaintiff's first amended complaint were filed and served by December 4, responsive pleadings are due no later than Thursday, December 14. The Court has already set a hearing on pending motions for Friday morning, December 15, from 9:00 a.m. to noon.

Plaintiffs therefore respectfully ask the Court to conduct a Case Management Conference in conjunction with the December 15 hearing. Given the exigency of this election contest, filing and serving this motion today, more than a week in advance of December 15, satisfies Rule 1.200(c)'s requirement of "[r]easonable notice."

Plaintiffs' counsel conferred with Defendants' counsel on November 30 and December 6 (in addition to preliminary discussions among some of the parties' counsel on November 27). To the maximum extent possible without the Court's participation, the parties have attempted to reach consensus on the scheduling and case-management issues raised below. Where the parties have been unable to reach agreement, the disagreement is noted below. One key area of agreement among the Plaintiffs, but not the Defendants, is that the pretrial procedures should be scheduled to permit the parties to be ready for trial in the latter half of January 2007. The Defendants, on the other hand, would propose that the pretrial procedures be scheduled to permit the parties to be ready for trial in mid-February 2007.

At the December 15, 2006 Case Management Conference, counsel for all parties should be present and prepared to enter stipulations as to any relevant matter and to make other decisions necessary for the efficient management of this action. Plaintiffs and Defendants request that the Court promptly enter a Scheduling Order reciting the actions taken by the Court (and any stipulations made by the parties) at the Case Management Conference. This Scheduling Order "shall control the subsequent course of [these cases] unless modified to prevent injustice." Fla. R. Civ. P. 1.200(d).

At the Case Management Conference, Plaintiffs and Defendants ask the Court to consider the following nine specific matters:

1. **Fact Discovery:** Pursuant to Rule 1.200(a)(4), Plaintiffs ask the Court to limit, schedule, order, and expedite discovery. Specifically, Plaintiffs request:

(a) that the cut-off date for all fact (i.e., non-expert) discovery be January 5, 2007;

(b) that the Court rule by the close of business on December 15, 2006, on all pending motions to compel production of electronic voting-system hardware, software, and data (and on any related motions for a protective order), so that the parties may quickly commence with the testing and review of the electronic voting system;

(c) that, consistent with Rule 1.340, each party may serve upon any other party up to 30 written interrogatories by December 29, 2006, with responses to each written interrogatory due seven calendar days after service;

(d) that, consistent with Rules 1.350 and 1.351, each party may serve upon any other party up to 30 requests for production and/or inspection by December 29, 2006, with responses to each request due seven calendar days after service;

(e) that, consistent with Rule 1.370, each party may serve upon any other party up to 15 written requests for admission by December 29, 2006, with responses to each request due seven calendar days after service;

(f) that, consistent with Rule 1.310, each party may take the testimony of up to 10 parties or other non-experts by deposition upon oral examination, to be completed by January 5, 2007, with each deposition limited to four hours unless extended by agreement of all parties; and

(g) that, for purposes of this paragraph, Plaintiff Jennings, the *Fedder* Plaintiffs collectively, the State Defendants collectively, the County Defendants collectively, Defendant Buchanan, and Election Systems & Software, Inc. shall each be treated as one “party.”

2. **Experts:** Pursuant to Rule 1.200(a)(5), Plaintiffs ask the Court to schedule disclosure of expert witnesses and the discovery of facts known and opinions held by such experts. Specifically, they request:

(a) that, consistent with Rules 1.280(b)(4) and 1.390, written reports from each expert witness be served on all parties by January 5, 2007; and

(b) that, consistent with Rules 1.280(b)(4), 1.310, and 1.390, any testifying expert witness’s oral deposition may be taken during the week of January 8 to 12, 2007, with each such deposition limited to eight hours unless extended by agreement of all parties.

3. **Stipulations:** Pursuant to Rule 1.200(a)(8), Plaintiffs ask the Court to require filing of stipulations no later than January 15, 2007, if issues can be narrowed.

4. **Pretrial Conference:** Pursuant to Rule 1.200(a)(10), Plaintiffs ask that the Court, no later than Tuesday, December 26, 2006, and consistent with Rule 1.200(b)-(d), notify the parties that they must appear at a final pretrial conference to be held during the week of January 15 to 19, 2007.

5. **Dispositive Motions:** Pursuant to Rule 1.200(a)(1), Plaintiffs ask that the Court require all potentially dispositive motions, including motions filed under Rule 1.510, be filed and served by January 15, 2007, with responses filed and served by January 19, 2007, and with no reply or sur-reply briefs allowed.

6. **Witness and Exhibit Lists:** Pursuant to Rule 1.200(a)(10), Plaintiffs ask the Court to order all parties to file and serve final witness and exhibit lists by January 19, 2007.

7. **Setting the Trial:** Pursuant to Rule 1.200(a)(2), Plaintiffs request that the Court enter a timely Order, subject to Rule 1.440, setting a date for trial to commence in late January 2007. The case currently is expected to take approximately four or five full days.

8. **Reference to a Master:** Pursuant to Rule 1.200(a)(9), Plaintiffs ask the Court immediately to refer all disputed issues (both as to discovery and pretrial procedure and as to the merits) to a general or special master (or magistrate), consistent with Rule 1.490, if the Court believes that its docket is too full otherwise to permit completion of the trial in these consolidated cases before the end of January 2007.

9. **Defendants' Disagreements with the Above Requests by Plaintiffs:** Based on a conference call conducted late in the afternoon of December 6, 2006, Plaintiffs understand that Defendants agree with the points addressed above (in items #1 to #8), with the following exceptions. Defendants would request:

(a) that the Court schedule a full-day evidentiary hearing on the first available date on the Court's calendar after December 21, 2006, as requested in Defendant Election Systems & Software, Inc.'s motion filed on December 6, 2006;

(b) that the Court not rule on Plaintiffs' pending motions to compel production of electronic voting-system hardware, software, and data (and on any related motions for a protective order) until after that full-day evidentiary hearing;

(c) that the Court on December 15, 2006 hear all then-pending motions that any of the Defendants filed on or before December 6, 2006;

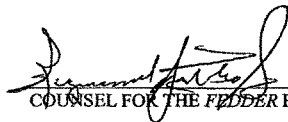
(d) that the deadlines for fact discovery, stipulations, pretrial conference, dispositive motions, and witness and exhibit lists set forth above (in item #1 and items #3 to #6) be pushed back by approximately 21 days;

(e) that the response times for fact discovery be ten days, rather than seven;

(f) that the expert-report deadlines be pushed back and staggered, with the deadline for Defendants' expert reports set ten days after the deadline for Plaintiffs' expert reports; and

(g) that the Court set a date for trial to commence in mid-February 2007, perhaps the week of Monday, February 12, 2007.

Respectfully submitted this 7th day of December, 2006 by:


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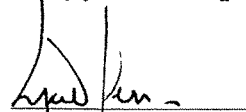
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Tab 20

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs.

CASE NO.: 2006-CA-2996

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher and State Senator Daniel
Webster, et al.,

Defendants.



PROCEEDINGS:	Hearing
BEFORE:	HONORABLE WILLIAM L. GARY
DATE:	Friday, December 8, 2006
TIME:	Commenced at 2:00 p.m. Concluded at 2:58 p.m.
LOCATION:	301 South Monroe Street Tallahassee, FL
REPORTED BY:	Tracy L. Brown Certified Registered Reporter

ACCURATE STENOGRAPHY REPORTERS, INC.
2894-A REMINGTON GREEN LANE
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PROCEEDINGS

1
2 **THE COURT:** I believe we're here on Election
3 Systems and Software, Inc.'s motion; is that
4 correct?

5 **MR. THOMAS:** Correct, Your Honor.

6 **THE COURT:** Are you ready to proceed?

7 **MR. THOMAS:** Yes, sir.

8 **THE COURT:** Let's do it.

9 **MR. THOMAS:** Your Honor, Harry Thomas on
10 behalf of Election Systems and Software, Inc.,
11 which I'll refer to throughout this hearing as
12 ES&S. With me at counsel table is Jeff Frehn,
13 also of our firm.

14 ES&S was first advised by Plaintiff's
15 counsel, Mr. Herron, that it had been added to the
16 suit as a defendant on November 30. And ES&S was
17 served with a complaint on December 4. Prior to
18 suit being filed on November 30, this Court
19 apparently at a hearing on November 21 had
20 instructed Plaintiffs that with regard to their
21 demand for production of the source code and
22 proprietary equipment that's at issue here today,
23 that ES&S should be given not just notice, but
24 quote, "plenty of notice."

25 In addition to filing the amended complaint

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1 on November 30, Plaintiff also filed a motion to
2 compel to the State to produce ES&S's source code
3 and motion for entry of a protective order with
4 regard to the production of the source code. In
5 Plaintiff Jennings' motion for protective order
6 she concedes that the ES&S source code is a trade
7 secret at least for purposes of that motion.

8 On December 5, 2006, without discussing the
9 matter with ES&S's counsel, Plaintiff filed a
10 notice of hearing setting the motions to compel
11 and for protective order for a hearing on
12 December 15th. Three hours were reserved for that
13 hearing, but Plaintiffs have also noticed motions
14 to dismiss and a motion for scheduling conference
15 for hearing at the same time.

16 **THE COURT:** Excuse me. There is no motion
17 for scheduling conference that's been set through
18 my office. There was one filed after my JA said
19 we don't do that.

20 **MR. THOMAS:** We were served electronically.

21 **THE COURT:** I understand. I just want the
22 record to be clear.

23 **MR. THOMAS:** The notice for the December 15
24 hearing did not designate the hearing as an
25 evidentiary hearing and presumably Plaintiff

1 intended to have the issue of production of ES&S's
2 trade secrets resolved based only on argument of
3 counsel.

4 On December 6th, 2006, only two days after
5 being served, ES&S retained Professor Michael
6 Herron as an expert witness and began discussions
7 with an additional expert witness. Also on that
8 date, ES&S filed a motion before Your Honor today
9 requesting that Plaintiff's motion to compel and
10 for protective order not be heard on December 15
11 as noticed.

12 Instead, ES&S requested that it be given at
13 least 15 days until and including December 21,
14 2006 to file its response to those motions and
15 that the Court set an evidentiary hearing of at
16 least one day for the presentation of evidence and
17 argument of counsel on the motions to compel and
18 protective order.

19 On December 7th, ES&S filed a supplement to
20 its motion to notify the Court of its retention of
21 Professor Herron and to provide a copy of
22 Professor Herron's declaration which describes his
23 work, what remains to be done, the time it will
24 take to complete the work, and, in his opinion,
25 the time required for him to present and explain

1 his conclusions from the witness stand.

2 Lastly, on December 7th, 2006, Plaintiff
3 filed a motion to compel the production of the
4 proprietary trade secret equipment that was
5 directed to Sarasota County. The motion asked
6 that the county be required to produce voting
7 machines. Those machines contain ES&S trade
8 secrets in the form of software and hardware that
9 is subject to a license agreement with Sarasota
10 County.

11 I'd like to address for a moment what the law
12 requires when a trade secret privilege is
13 asserted. And as I noted, here the pending
14 motions to compel are directed to the state and
15 Sarasota County and not to ES&S. But as we
16 pointed out in our motion, ES&S has a right under
17 Florida Statute 90.506 to prevent other persons
18 from disclosing ES&S's trade secrets and it's
19 without question that this Court has the authority
20 to order that the trade secrets not be disclosed.

21 Before a court decides whether or not to
22 prohibit the disclosure of a trade secret or to
23 permit disclosure under limited conditions, case
24 law prescribes what procedures the court must
25 follow in order to ensure that the essential

1 requirements of law are provided to the owner of
2 the trade secret.

3 The cases cited in our motion, at least two
4 of which speak directly to decisions by trial
5 courts regarding the production of trade secret
6 computer source codes, sets out the steps to be
7 followed by a trial court when the trade secret
8 privilege is asserted as a basis for resisting
9 production.

10 The first step is for the court to determine
11 whether the request for production constitutes
12 trade secret. Here, as I pointed out, Plaintiff
13 Jennings has admitted, at least for purposes of
14 her motion, that what ES&S seeks to protect is a
15 trade secret. Accordingly, we did not expect that
16 we would have to submit evidence to prove the
17 trade secret status of the source code and
18 proprietary equipment.

19 And our estimate of the time required in
20 request for a one-day hearing was premised upon
21 that representation. However, the Fedder
22 Plaintiffs' response that was served on ES&S
23 electronically last evening now makes this an
24 uncertain question.

25 In their opposition to ES&S's motion, the

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1 Fedder Plaintiffs take a contradictory position on
2 this issue. At one time in their memorandum, they
3 seem to contest whether the materials sought are a
4 trade secret and another seem to accept that they
5 are trade secrets.

6 For example, if Your Honor will look at page
7 seven of their memorandum, the Fedder Plaintiffs
8 assert, quote, "Even if ES&S asserts that some or
9 all of the materials sought by the plaintiff are
10 trade secret, such designation is not automatic.
11 The burden is on the party resisting discovery to
12 show good cause for protecting or limiting
13 discovery by demonstrating that the information
14 sought is a trade secret or confidential business
15 information that disclosure may be harmful."

16 In stark contradiction of that statement, on
17 page 12 of their pleading, the Fedder Plaintiffs
18 state that, quote, "With no party contesting trade
19 secrecy status in order to facilitate the
20 production of discoverable materials, plaintiffs
21 need only demonstrate a reasonable necessity for
22 the information."

23 Thus, it is now uncertain whether the
24 Plaintiffs will or will not contest the trade
25 secrecy status of the material ES&S seeks to

1 protect from disclosure.

2 Once the party seeking to protect against
3 disclosure established the material sought is a
4 trade secret, the court must then require the
5 parties seeking production to show reasonable
6 necessity for the trade secret material. If there
7 are factual disputes concerning the reasonable
8 necessity of production or if the matters are of a
9 technical nature, the court cannot decide the
10 issue based on argument of counsel and legal
11 memorandum. Case law instructs that a trial court
12 needs sufficient insight into the relevant factors
13 which must be waived before deciding the competing
14 interest of the respective parties.

15 In order to gain the insight required to
16 decide the issue, the court should schedule an
17 evidentiary hearing on the issue of reasonable
18 necessity, giving the parties sufficient time and
19 opportunity to prepare to present evidence.

20 Refusal of the trial court to provide an
21 evidentiary hearing, a dispute over the reasonable
22 necessity of producing a trade secret computer
23 source code, resulted in the Fourth District Court
24 of Appeal finding that the trial court departed
25 from the essential requirements of law. That was

1 in the 1998 case of Beck versus Dumas which is at
2 709 So.2d 601.

3 In that case, Your Honor, the parties had
4 agreed for purposes of the hearing that the
5 requested materials were trade secrets and thus
6 the hearing was for Dumas to show reasonable
7 necessity for the requested materials. That's at
8 page 603 of the opinion. The court, despite its
9 acknowledged lack of familiarity with the
10 technical nature and significance of the requested
11 materials, granted the motion to compel production
12 finding on the basis of argument of counsel that
13 the plaintiff had, quote, "Demonstrated a
14 reasonable necessity for production of the
15 requested materials."

16 The question that was then before the
17 appellate court was whether the trial court had
18 departed from the essential requirements of law by
19 ordering Computel, the party in that case, to
20 disclose its trade secret without first conducting
21 either an in camera inspection or an evidentiary
22 hearing. The court said, we think so, given the
23 sophisticated and highly technical nature of the
24 requested materials, an evidentiary hearing shall
25 be held. That's at 603 of that opinion.

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1 Respectfully, Your Honor, the case law
2 couldn't be more clear. The Plaintiffs' counsel
3 assertion that an evidentiary hearing is not
4 necessary on the issue of reasonable necessity, it
5 would only be necessary to determine whether the
6 materials are trade secrets, is a gross
7 misunderstanding of misrepresentation of the law.
8 Respectfully, the law is clear that failure to
9 provide a fair and full opportunity to address
10 these issues in an evidentiary hearing departs
11 from the essential requirements of law.

12 In the Premier Lab case that was cited in our
13 memorandum, the appellate court remanded with
14 direction for the trial court to do two things,
15 first, to hold a hearing to determine if the
16 material was trade secret, and in that case they
17 were dealing with a customer list. And that was
18 certainly something that could be done in an in
19 camera inspection hearing. But then it said if it
20 was found to be a trade secret, the court was to
21 then conduct an evidentiary hearing on the
22 reasonable necessity for disclosure.

23 The Plaintiffs also cite the American Express
24 Travel Related Services, Inc. versus Cruise. And
25 they argue that the burden that must be met is a

1 very low threshold of proof. As we have argued in
2 our papers, the analysis not only requires a
3 finding of reasonable necessity, but also a
4 balancing of the competing statutory interest.
5 And as stated in the American Express versus
6 Cruise case, even if this Court were to find
7 reasonable necessity, it must then determine,
8 quote, "Whether the necessity for the production
9 of the material outweighs the interest in
10 maintaining its confidentiality."

11 In another case involving the production of a
12 trade secret source code, Rare Coin-IT, Inc.
13 versus I.J.E., a case also cited in our motion, a
14 Third DCA case from 1993, the court held that a
15 trial court could not avoid the need to make a
16 finding on the issue of reasonable necessity by
17 simply ordering the production of the source code
18 pursuant to a protective order. The cases show
19 that in a situation like the one here, an
20 evidentiary hearing on the issue of reasonable
21 necessity is an essential requirement of law.

22 Now the Plaintiffs cite Your Honor to a case,
23 that's the Goodyear case cited in the Plaintiff
24 Jennings' memorandum that was filed this morning,
25 and they cite that proposition that order -- the

1 court rejected an argument that vacating the
2 confidentiality order without holding an
3 evidentiary hearing and an in camera inspection of
4 materials violated due process.

5 If Your Honor looks at that case, what you're
6 going to find is that what the court found there
7 was that the party making the argument that an
8 inspection -- that a hearing should have been held
9 had waived the right to that hearing. They had
10 five years earlier acceded to the entry of that
11 confidentiality order without a hearing.

12 But one thing that's important, if you look
13 at that decision, you'll also find that what the
14 court said was that it was improper for the court
15 in this first instance to have entered that
16 confidentiality order without a hearing. What is
17 required here is in fact a hearing, Your Honor.

18 In the supplement to our motion, we attach
19 the declaration of Professor Herron in which he
20 outlines the nature of his work and explained why
21 his work cannot be completed by the December 15,
22 2006 hearing date.

23 As Professor Herron points out, in order to
24 provide a full analysis of why electronic voting
25 machines are not responsible for the under vote,

1 he needs to review data and statistical
2 information not only from Congressional District
3 13, but information from other counties where the
4 iVotronics voting machines were used. This
5 involved the gathering, inputting analysis of a
6 large volume of data, and Professor Herron states
7 it will take at least through December 15 to
8 complete this work.

9 Given the short period of time that ES&S has
10 been in this case and the promptness of which it
11 has acted to retain an expert, ES&S should be
12 provided adequate time to prepare for and present
13 evidence as to why production of its trade secrets
14 is not reasonably necessary. Due process will not
15 be satisfied with anything else.

16 ES&S has also requested that a full day be
17 set aside for evidentiary hearing based upon
18 Professor Herron's estimate that it will take
19 longer than three hours for the presentation of
20 his testimony. There are numerous parties here,
21 the fact is that the burden of going forward to
22 present evidence of why production of trade
23 secrets is reasonably necessary is the
24 Plaintiffs'. Given the expected witnesses for
25 Plaintiffs, and the expected witnesses for ES&S,

1 direct and cross examination and argument of
2 counsel will surely consume at least one day.

3 Plaintiffs, both the Fedder Plaintiffs and
4 Plaintiff Jennings, in their memoranda seem to
5 want the Court to focus on only one Florida
6 statute that calls for expedited resolution of an
7 election contest. They in effect ignore the
8 competing statutory right afforded to ES&S to
9 protect trade secret and proprietary technology
10 and equipment. There is nothing in Florida
11 Statute 102.168 regarding election contest that
12 supersedes any other rights afforded to the
13 parties in Florida statutes, nor can there be any
14 provision in the election contest statute that
15 supersedes the due process guarantees afforded to
16 all parties under the federal and state
17 constitution.

18 ES&S is sincerely trying to expedite its
19 preparation and participation as much as possible.
20 Certainly if Plaintiffs require ES&S to prove the
21 obvious, that the information sought is a trade
22 secret, it will only further delay and take longer
23 at hearing.

24 At page 14 of their memorandum, the Fedder
25 Plaintiffs assert that their burden of proof in

1 this case, like the Jennings folks asserted, is
2 that it's a low evidentiary burden and that it has
3 been met by Plaintiffs' initial submission of
4 expert declaration, which are attached as exhibits
5 to their amended complaint. This assertion
6 misrepresents Florida law, the content of the
7 expert's declaration, and also ignores due process
8 guaranties afforded to ES&S.

9 First, the issue is framed by the Fedder
10 Plaintiffs as rather simplistic and I believe
11 disingenuous. At page 14 of their pleading, they
12 state that, quote, "The only question before the
13 Court is an extremely narrow one, the answer to
14 which is self-evident."

15 In an election contest alleging malfunctions
16 of voting technologies, it is reasonably necessary
17 to examine that technology in order to determine
18 whether any such malfunctions took place. In
19 essence, the Fedder Plaintiffs argue that the mere
20 allegation that the cause of the under vote was
21 machine malfunction together with their paid
22 expert's opinion that this may have been a cause
23 is sufficient to defeat the statutory protection
24 afforded to trade secrets and proprietary
25 information.

1 Following this logic, any plaintiff that sued
2 the Coca-Cola bottling company alleging that they
3 became ill as a result of drinking Coca-Cola soft
4 drinks would merely have to file a complaint
5 making this allegation, hire a nutritionist to
6 provide a supporting opinion that Coke may have
7 caused the illness, at which point they would be
8 immediately entitled to disclosure of Coca-Cola's
9 trade secrets to find the ingredients of this
10 formula. Of course, they would then argue as they
11 do here because they're not a competitor of
12 Coca-Cola and promises they won't tell anyone how
13 Coca-Cola is made, that therefore there would be
14 no harm from limited disclosure.

15 Plaintiffs' simplistic approach is patently
16 absurd. It also ignores the fact that neither
17 expert declaration submitted by Plaintiffs which
18 are attached to the amended complaint concludes
19 that a machine malfunction was in fact the cause
20 of the percentage of under votes observed in the
21 election. Indeed, Mr. Stewart in his declaration
22 states this percentage of under votes could have
23 been, quote, "Caused by the use of iVotronics
24 machines," close quote.

25 This is a slick play on words. His

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1 declaration in this respect is totally consistent
2 with the theory propounded by the majority of
3 experts who have looked at this, that the vote
4 resulted from ballot layout and design, not from
5 machine or software malfunction.

6 Likewise, Mr. Walloch's declaration that has
7 been attached to the amended complaint does not
8 reach any conclusions. He states at page two of
9 his declaration that, quote, "I have been asked to
10 provide my opinion concerning information
11 equipment that might be necessary to conduct a
12 forensic investigation on the recent election in
13 Sarasota County whose purpose would be to
14 determine the cause or causes of unusually high
15 under vote rate in the race for the Thirteenth
16 Congressional District."

17 The vast majority of his declaration that
18 follows that quote is a listing of the possible
19 causes of the under vote and suggested methodology
20 to test those hypotheses.

21 These declarations and mere allegation of
22 machine malfunction do not come close to meeting
23 the burden of proof that Plaintiff must satisfy to
24 require the disclosure of trade secrets. But
25 again, Your Honor, the point is that ES&S has not

1 had an opportunity to vigorously cross-examine
2 these experts to determine whether their
3 declarations or subsequent testimony in court is
4 sufficient to meet the significant burden of proof
5 that Florida law places on plaintiffs in regard to
6 disclosure of trade secret proprietary
7 information.

8 Now, just this morning we have another
9 declaration filed by one of the Plaintiffs'
10 expert. It was attached to their memorandum that
11 was received this morning. The fact is, Your
12 Honor, that dualing affidavits from experts are
13 not going to meet the burden of proof required
14 under Florida law. Those declarations and
15 affidavits are subject -- should be subject to
16 cross examination, and to deny that would be a
17 denial of due process.

18 Plaintiffs seem to be arguing that the Court
19 simply accept as true the allegations in their
20 complaint and the statements made in the
21 declarations by their so-called experts. That
22 might well be the case that the Court would hear
23 on a motion to dismiss. You might accept those
24 allegations as true for that purpose, but that's
25 not why we're here. We're here to determine

1 whether or not trade secrets should be produced,
2 and there is a much larger and significant burden
3 placed on plaintiffs.

4 Not only that, ES&S has a due process right
5 as well as statutory right as validated repeatedly
6 by the case law to present its own evidence to
7 show that there is no reasonable necessity to
8 access its trade secret information and this
9 requested disclosure even under the proposed
10 protective order would cause irreparable harm.
11 The fair reading of the case law in this case
12 makes it evident that a hearing is required.

13 The Fedder Plaintiffs allege in their
14 memorandum that ES&S seeks not to present evidence
15 in support of the narrow reasonable necessity
16 question, but instead wants to weigh the merits of
17 the case before discovery, an example of putting
18 the cart before the horse if there ever was one.
19 That's a quote from page 14 of their memorandum.
20 However, it is the plaintiffs that have put
21 defendant, ES&S, in a position where it must
22 conduct this evidentiary hearing prior to
23 discovery commencing.

24 What Plaintiffs seem to fail to understand is
25 that ES&S does not have an interest in the

1 ultimate issues to be tried. ES&S is a reluctant
2 defendant in this manner. It is not here to argue
3 whether Mr. Buchanan or Ms. Jennings should be the
4 next representative in Congress from the
5 Thirteenth Congressional District in Florida. Its
6 only interest in this matter is to protect the
7 defendant's trade secret and proprietary
8 information.

9 Therefore, the hearing on motion to compel is
10 in effect ES&S's trial. It has been forced to
11 prepare for and conduct this trial within days of
12 being served with the complaint and without the
13 benefit of discovery. ES&S reluctantly shoulders
14 that burden and only asks that this Court provide
15 it a meaningful opportunity, 15 days, to prepare
16 and a meaningful opportunity of a one-day
17 evidentiary hearing to present its case.

18 Your Honor, we respectfully submit that most
19 if not all delays in these proceedings, assuming
20 you decide there have been delays, have been
21 occasioned by Defendants. First, they file suit
22 in the wrong forum, Sarasota, then they tried to
23 prevent the state from conducting its
24 post-election test to determine the cause for the
25 under vote. Then they filed suit in this court,

1 set an emergency hearing the day after filing suit
2 seeking ES&S's proprietary equipment technology
3 without notifying my client. Then they failed to
4 follow this Court's direction to immediately bring
5 in my client by way of subpoena, instead waited
6 nine days to file an amended complaint.

7 Now they all argue that there's only four
8 weeks left until the new Congress convenes and
9 therefore this Court must trample on my client's
10 rights because their cause is urgent.

11 It's interesting to note, Your Honor, that in
12 their proposed scheduling order, they in effect
13 assert that at least two months are needed from
14 the time of the filing of the complaint for
15 preparation necessary to conduct a trial. They
16 state that the trial should commence in late
17 January on a complaint filed November the 20th.
18 On the other hand, they believe they're entitled
19 to two months to prepare, but they suggest and
20 object to our request for 15 days to prepare for
21 ours.

22 Respectfully, I think the Court should wonder
23 why it is that plaintiffs so strenuously object to
24 a request for a day's evidentiary hearing to
25 challenge their position in a public forum.

1 Indeed, Your Honor, if they're so confident of
2 their legal position and the evidentiary value of
3 their experts' declarations, I respectfully submit
4 that they should welcome a public opportunity to
5 demonstrate that there is a compelling need for
6 disclosure of the information which they seek.

7 In summary, Your Honor, today's hearing is
8 not to determine the merits of the complaint, the
9 motions to dismiss that's been filed, or even
10 whether the motions to compel should or should not
11 be granted. The limited purpose of today's
12 hearing is to determine whether ES&S is entitled
13 under Florida statute as well as Florida and
14 federal constitutional provisions to a brief but
15 adequate opportunity to prepare a response to
16 Defendants' motions and whether it will be
17 afforded a meaningful opportunity to present
18 evidence in support of its position opposing
19 disclosure of its trade secret and proprietary
20 technology and equipment.

21 That concludes my presentation, Your Honor.
22 But I do have for you copies of the cases I
23 referred to if you do not have them.

24 **THE COURT:** Okay.

25 **MR. THOMAS:** Plaintiffs' counsel has copies.

1 **MR. COFFEY:** Thank you, Your Honor. And if I
2 may, Kendall Coffey. Mark Herron is also here for
3 Jennings and Mr. Mitchell who represents the
4 public interest plaintiffs in the lawsuit will be
5 responding in part.

6 But let me begin at the outset by emphasizing
7 that there's certainly an entitlement to a
8 hearing. What there is no entitlement to do is
9 protract this process unnecessarily, nor is there
10 an entitlement to in effect a full day to decide
11 something that is very narrow. It is a discovery
12 issue. It is access to information so that we can
13 prove our case.

14 And since Mr. Thomas was sort of referring to
15 why don't we want a full-day hearing and of course
16 the answer's obvious, we don't want to slow the
17 case down, we don't want to get sidetracked so
18 that every time there's a discovery dispute in
19 this case there's a day hearing.

20 But I'll answer the following question of
21 ES&S, if they are so darned confident that their
22 systems and their software are perfect, then why
23 are they fighting tooth and nail to keep
24 everything behind locked doors when, as we have
25 emphasized, the experts, the outside experts that

1 would be involved are not competitors. This isn't
2 Pepsi-Cola trying to get ahold of Coca-Cola's
3 trade secret. Ms. Jennings is not going into the
4 computer software business.

5 This is a matter not of a competitor's
6 attempt to find out how they make their machines
7 so that we can then go make our own machines, and
8 that's the commonality of all their cases, Your
9 Honor. This is a candidate and a public and a
10 nation that want to know what went wrong. And to
11 know what went wrong in the malfunction of
12 election technology, of course, you have to
13 examine that election technology.

14 So we're not here to disagree with the fact
15 that there ought to be a hearing, we disagree with
16 the notion of delaying things further. We don't
17 think it's necessary and I'll talk to a perhaps
18 more complete version of the time line. And this
19 certainly is not the kind of full-blown extensive
20 hearing that they are talking about, it is just
21 basically a relevancy determination that Your
22 Honor is to make.

23 But to kind of fill out the time line a
24 little bit, let me just mention on the Sarasota
25 litigation, of course, it was filed in Sarasota

1 because the case could not be brought yet in
2 Tallahassee until November 20th when the results
3 were certified. We tried to get a head start in
4 Sarasota on testing things because we wanted to
5 move things. And ultimately it didn't move as we
6 hoped because Buchanan didn't name an expert, then
7 he was ordered to name an expert by the Sarasota
8 judge so we could get that process moving and then
9 by then the case was filed in Tallahassee. That's
10 where we are. That's where we proceeded.

11 We filed not within ten days or ten hours, we
12 filed within two hours, could not have been a
13 stronger record of trying to move this thing at
14 light speed. And, Your Honor, we respect your
15 ruling to disagree with our attempt to get this
16 case moving even faster. We did go in the day
17 after the case was filed and tried to get a very,
18 very expedited time table. Your Honor provided 15
19 days, we accept that and we're working with it.
20 But it is more wrong than I can begin to say for
21 them to suggest with everything we're trying to do
22 to move this along that somehow that we're at
23 fault.

24 I would also talk a little bit about the ES&S
25 time line. And the argument that the company that

1 has machines all around this nation is somehow
2 shocked, shocked to find out that there are
3 allegations of malfunction in this establishment,
4 that it is just caught off guard, sort of ambushed
5 in the middle of the night and not ready to go
6 forward is nonsense.

7 In fact, as soon as 11 -- November 9th and
8 November 10th ES&S reported that they were already
9 in touch with the supervisor's office, that they
10 already took the public position that the
11 equipment worked very well, and that they
12 proclaimed through ES&S's own representatives that
13 this was an intentional under vote. So this
14 wasn't a surprise to ES&S; they knew all about it.

15 And by the way, they had to know all about it
16 because their agreement with Sarasota right in the
17 contract specifies that the Sarasota supervisor's
18 office must tell them immediately if there are any
19 issues and that they, ES&S, are going to
20 immediately take all steps to protect their
21 computer software proprietary interest that they
22 are so doggedly putting ahead, we would say, of
23 the public interest in this case. That
24 contractual specification that they will be
25 immediately defending the proprietary software was

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1 clearly activated a number of weeks ago. Nor do
2 we think 15 days is lacking here if that is in
3 fact the object of their motion.

4 We would note parenthetically that when they
5 moved to ask for 15 days at that time, they stated
6 that the Plaintiff gave ES&S no notice until
7 December 4th. No notice until December 4th, and
8 then, of course, they proclaimed that that means
9 that when they do their math, they need more time.
10 We would point out that on November 30th, a bit
11 earlier for the purposes of the 15-day calculation
12 of December 4th, four ES&S lawyers joined a
13 conference call talking about the case, a
14 conference call in which it was broadly discussed
15 that there would be a 15-day reciprocal response
16 time on discovery.

17 And by the way, within the course of that
18 conference call or immediately afterwards, copies
19 of everything were furnished on November 30th by
20 Mr. Herron to Mr. Thomas. The hearing transcript,
21 the agreement, everything, probably more stuff
22 than I had in my own file. So the December 4th
23 statement which they have apparently backtracked
24 from, and they realize that was wrong, was a
25 central cornerstone of their insistence that they

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1 needed 15 days. And we would respectfully submit
2 that the calendar tells us all that from
3 November 30th to December 15th is 15 days.

4 And I want to say a word or two about Michael
5 Herron, who is the expert who says he needs more
6 time. Mr. Herron, Your Honor, did a comprehensive
7 report, a 40-something page report on this very
8 subject that was filed on the Internet on
9 November 23rd. Again, they say they need 15 days.
10 November 23rd, it is a report that was put out and
11 I say on the Internet because academics do not
12 tend to post opinion papers, research papers
13 unless they're pretty doggone confident in what
14 they've got. And we have a copy of it, Your
15 Honor. It is on the Internet.

16 This document, I think, speaks volumes about
17 the allegations that they are not prepared to do
18 what amounts to a preliminary hearing to determine
19 the threshold questions of what discovery do we
20 get in the case.

21 On December 3rd, he filed another report.
22 Again, this is the guy who can't be ready to talk
23 about the issue until December 15th.

24 And I wanted to mention a couple of things in
25 the report, because I think they're powerful and

1 they're compelling and some of them are quite
2 accurate. He states at page 40, at page 40, that
3 he is 90 percent confident that between 14,322 and
4 14,896 voters in Sarasota County were suppressed,
5 that's his word, from voting in the Thirteenth
6 district race. And, in fact, Judge, he concludes
7 that there is 100 percent chance that Chris
8 Jennings would have won the race if the machines
9 had been right.

10 Now, to be clear, his view is it was the
11 configuration of the races on the ballot, not the
12 underlying software. But when both experts,
13 Judge, are saying that Chris Jennings should have
14 won by 3,000 votes and something went really
15 wrong, we've got reasonable necessity by anybody's
16 stretch or use of those words.

17 3,000 votes is what Mr. Herron, their
18 proposed expert, said should have been the margin.
19 He also says something that I think is so
20 relevant -- and again, his ultimate conclusion on
21 the merits, we may disagree with him about that,
22 but he's got some mighty instructive points that I
23 think are very, very important for today's
24 purposes.

25 So, for example, he says that his paper is a

1 purely statistical exercise that cannot directly
2 address the possibility that engineering lies
3 underneath the under votes. In other words, that
4 if you load too many races on a ballot, two things
5 could happen, the voters could miss it, or the
6 cramming and jamming effect on the ballot is what
7 triggers the software bug. He can't determine
8 that.

9 You know, Judge, as our system works, the one
10 to determine that is going to be Your Honor. But
11 to determine that, the parties are supposed to
12 get, just like in any other case that ever comes
13 before Your Honor, the parties are supposed to get
14 the basic minimum discovery. It's a case about
15 whether election technology malfunctioned. Of
16 course we have to examine the election technology.

17 Now we would certainly, certainly emphasize
18 that, yes, there's no dispute, we're saying it's a
19 trade secret. And of course, that's exactly why
20 you don't need a full day when all you're really
21 assessing is the traditional judicial function of
22 determining relevancy and considering the intended
23 factors. These are trade secrets. And we've
24 heard a lot from Mr. Thomas about the value of
25 them to him, but I would certainly emphasize, Your

1 Honor, the right to vote is as precious as any
2 trade secret, the right to know that the votes
3 count will certainly be something that Your Honor
4 will respect and that we all know is as important
5 or more important than ES&S's dogged determination
6 to basically hang on to everything they've got and
7 keep it from the public's view.

8 And I think that another factor is
9 essentially Your Honor's determination, it's not a
10 matter of fact finding you'll really want to
11 consider, is didn't ES&S go into a matter of
12 public trust, the core of democracy, with their
13 eyes wide open? That there's no paper trail here
14 and that there could be things that would happen
15 and people would want to know what happened?
16 Their eyes were wide open, certainly their bank
17 accounts have been wide open for many millions of
18 dollars of public funds in the State of Florida,
19 and we would suggest that some degree of careful
20 scrutiny rather than closing the door is what is
21 appropriate now.

22 The cases they cite do not say what they say
23 it does in terms of the scope of the evidentiary
24 hearing. Mr. Thomas's suggestion to you that
25 you're supposed to decide this case on the merits,

1 who's right, who's wrong? Is it Herron's theory
2 or their theory of ballot display or is it our
3 theory of software and computer malfunction?
4 Judge, you don't decide the outcome of the case
5 before you get the most basic discovery. And it
6 is only by getting into these issues that we can
7 begin to develop the record and present to Your
8 Honor the evidence at trial.

9 When I heard the suggestion a few minutes ago
10 that they're not ready with all the evidence they
11 need to win the case at trial, my only reaction
12 could be, maybe yes, maybe no, but since when does
13 that become the test for determining when you get
14 discovery in our system? The term reasonable
15 necessity means one thing, a legitimate need and a
16 relevancy.

17 And so, for example, in the Goodyear case
18 that he talked about, they were pretty specific.
19 They said, you don't get tires -- it dealt with
20 tires -- unless they're substantially identical.
21 Which here, of course, we're talking about the
22 same software, the same issues that were used in
23 the case.

24 And they go on to say and they affirm the
25 trial judge in requiring that the expert have

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1 access to those portions of the petitioner's plant
2 which contain equipment or revealed procedures
3 reasonably relevant to the issues in this case.
4 That's what this is going to get out. It's not
5 going to be sitting down and listening to a whole
6 day of evidence on who wins and loses.

7 So we would submit, Judge, that ES&S, which
8 has known all about this for a long time, who's
9 had an expert who had a whole report ready as of
10 November 23rd, with a fine team of lawyers that
11 were on a conference call more than 15 days before
12 the hearing and got all the papers, they can most
13 assuredly be ready because this is not the final
14 hearing.

15 Mr. Herron wants -- one of the things he
16 itemizes in his declaration, he wants to get
17 results from Dade and Broward County. He wants to
18 go off and look for additional things outside of
19 the core information. Judge, experts may want
20 that stuff for trial, but we're only talking about
21 a very narrow question.

22 We believe, Judge, that in the three hours we
23 have set aside for next Friday where these issues
24 are essentially already noticed for hearing, Your
25 Honor can conduct a hearing in a way that

1 sufficiently meets any needs of due process. For
2 example, we -- our proffer's fairly
3 straightforward. We have Dan Walloch, who's had
4 affidavits that say, very simply, a fundamental
5 precondition to discovering a software flaw is
6 having access to the software in which such flaws
7 might exist. That ultimately is the question as
8 to whether this is relevant or not.

9 Is finding -- to find a software flaw, is it
10 reasonably necessary to have access to the
11 software in which the flaws might exist. When you
12 read that statement, which is a sworn proposition,
13 it really seems so commonsensical that how could
14 anybody argue with that? They have the right to
15 argue with it, but I would submit that rather than
16 go through a day of hearing all their theories
17 about visual display and ballot design, that's the
18 only issue.

19 It's discovery of our theory, not what they
20 want to say about their theory. Because for them
21 to be dualing -- taking their theory and pinning
22 it against our theory is really reaching the
23 merits. The issue, and the only issue that would
24 be appropriate in terms of reasonable necessity
25 for our discovery purposes, is the simple issue of

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1 is it reasonably necessary for us to develop our
2 theory.

3 And, of course, we know how the rules work,
4 whether it's summary judgment, whether it's any
5 kind of disposition of the case, you can't get
6 there until full and liberally available discovery
7 is afforded to the party making the claim. We
8 don't have to prove our case to get the discovery.
9 We're supposed to be able to get the discovery and
10 then present our best information before Your
11 Honor.

12 Judge, I'm going summarize with this, in two
13 or three hours, through a combination of
14 affidavits and focused -- and I would emphasize
15 focused -- evidentiary presentations, we believe
16 that Your Honor can manage this issue to an
17 appropriate conclusion. If the two or three hours
18 is not enough, then, of course, as with all
19 matters, we can come back another time to finish
20 out the hearing.

21 But there is no need either for ES&S's long
22 and well prepared expert or ES&S's very capable
23 attorneys who were certainly retained more than 15
24 days before that hearing, or for ES&S itself which
25 was taking definitive public opinions a month ago

1 in this matter, we don't need more time, we don't
2 need extra proceedings, and we have a need to get
3 this resolved promptly.

4 In Florida of all places, for whatever
5 reasons, these issues were entrusted to the
6 Tallahassee circuit court. That's what the
7 legislature did. There are issues that range from
8 hanging chads and butterfly ballots to now the
9 paperless trail of lost votes. And as we all
10 know, faith in democracy requires faith in our
11 voting systems.

12 For millions, Judge, that is a lost faith.
13 It cannot be a blind faith, it must be a faith
14 that is restored by outside testing, by a full and
15 fair and comprehensive investigation that makes
16 sure that we all know what really happened on
17 November 7th. And to get to that point, we do not
18 need to protract the hearing that is set for next
19 Friday, we do not need one day of evidence to
20 decide whether or not my client is entitled to get
21 evidence.

22 And with the confidentiality details we have
23 proposed with an expert that we can put in front
24 of you who can look you in the eye and say he
25 obeys your orders and he knows he's going to jail

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1 if he doesn't, there's plenty of protection for
2 ES&S.

3 **THE COURT:** Go ahead.

4 **MR. MITCHELL:** In the interest of time, Your
5 Honor, I'll waive --

6 **THE COURT:** No, in the interest of time,
7 you're going ahead.

8 **MR. MITCHELL:** Okay. You know, in the
9 interest of time not to say all of the things that
10 have already been said before this Court and have
11 already been presented from our motion as well,
12 we'd just like for the record that no defendant
13 has objected to the relevancy of the materials
14 sought in the Jennings discovery request which is
15 specifically incorporated in our request.

16 This is -- this discovery matter has already
17 been plainly stated, Your Honor, as a simple
18 discovery matter, and it goes to the essence of
19 what our case intends to prove, whether or not and
20 what happened in terms of the 18,000 under votes
21 and what caused that problem. And as a deliberate
22 attempt, the statute specifically calls for a very
23 reduced amount of time to get the matter to the
24 court.

25 The statute understands the importance of

1 solving election contests and getting to those
2 matters and in all -- as has already been stated,
3 all parties have been given sufficient time.

4 And the crux of the matter of what they're
5 talking about, Your Honor, is discovery and
6 whether they got reasonable notice. It's already
7 been stated over and over again on both sides of
8 the aisle that they have been provided reasonable
9 notice and have been afforded ample opportunity to
10 be prepared to respond to those things. So
11 they've been given the same time as all of the
12 parties involved.

13 It's widely recognized that a trade secret
14 does not trump all interests and is not absolute.
15 In the interest of time, we'll concede that it's a
16 trade secret as has been spelled out in our
17 complaint that we conceded that even if this is a
18 trade secret, it still does not trump the interest
19 of finding out what caused those problems, and
20 we're talking about simply discovery. And so what
21 they're trying to do with all of their affidavits
22 of declarations is trying to get to the arguments
23 of the merits of the entire case before we have a
24 simple opportunity to get to discovery to fix and
25 fashion our arguments and our alternative

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1 theories. Thank you, Your Honor.

2 **THE COURT:** Mr. Antonacci, I assume you're
3 here so they won't talk about you?

4 **MR. ANTONACCI:** They probably will anyway,
5 Judge, but the Secretary has no objection to the
6 motion.

7 **THE COURT:** Okay.

8 **MR. THOMAS:** Your Honor, in brief response,
9 this is not simply a discovery issue. I don't
10 understand counsel's argument. We're not here
11 seeking discovery from anyone. What we're seeking
12 is about a 15-day extension so that we can prepare
13 our case to come in here and show you that there's
14 no reasonable basis to require the production of
15 this source code. The plaintiffs have argued that
16 of course you should order it produced because the
17 cases that we've cited involve situations where
18 competitors are present in the lawsuit and that
19 their client, Ms. Jennings, isn't a competitor.

20 We agree, she's not a competitor, but she's
21 retained experts who make a living on the -- among
22 other things, on the lecture circuit trashing
23 electronic voting systems. So this is not simply
24 turning it over to somebody who doesn't have a
25 pecuniary interest in finding out what is in

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1 ES&S's source code.

2 And we have also present various voter
3 plaintiffs' groups. I think all of them are
4 diametrically opposed to electronic voting and
5 would like to find some way to see it disappear.

6 There are interests other than simply
7 Ms. Jennings sitting over on the Plaintiffs' side
8 of the table to obtain our source code. The fact
9 that Professor Herron has published a study is
10 correct, but if one were to read that study, you
11 would find that what has been published to date in
12 the large extent has to do with the portion that
13 Mr. Coffey cited you to, what was the effect, was
14 the allocation of under votes, that was a
15 substantial part of the original study.

16 And, yes, we are looking at vote information,
17 voting data from other areas where the iVotronics
18 system was used and that wasn't in the original
19 study. And as you saw in the declaration,
20 Professor Herron needs time to get that data
21 because it is going to show and give additional
22 proof that there is in fact a ballot layout design
23 problem here and not a problem with the software
24 and hardware.

25 And finally, there's more than simply his

1 work on it. The Secretary of State, it's my
2 understanding, has now completed parallel testing
3 of the machines and software and found absolutely
4 no problem with the way they work. All of this
5 taken together is going to establish when it's put
6 in front of you with sworn testimony that there is
7 no reasonable necessity for the production of
8 ES&S's source code.

9 And we respectfully request that you grant
10 our motion, give us the 15 days we request and set
11 a one-day hearing on this issue. Thank you, Your
12 Honor.

13 **MR. BURHANS:** Your Honor, Glenn Burhans for
14 Vern Buchanan. May I be heard very briefly?

15 **THE COURT:** Sure.

16 **MR. BURHANS:** Thank you, sir. Your Honor, I
17 hope to offer a very brief and somewhat different
18 perspective. As an initial matter,
19 Congressman-Elect Buchanan doesn't oppose the
20 motion, and principally because we believe that
21 this is not going to delay the proceedings or
22 delay them in any material way.

23 There's plenty of other discovery that has
24 been propounded and is ongoing. And there's
25 plenty of ways that this case can move forward in

1 the intervening time period before an evidentiary
2 hearing can be had. We can handle those parts of
3 the case and move forward.

4 We have a proposed trial schedule you
5 ordered, and while I understand that's not the
6 subject of today's hearing, I will note that
7 there's really no material difference in the time
8 frames that the parties are contemplating, either
9 the end of January or the beginning, first or
10 second week of February. I don't think that this
11 delay, that if you want to call it that, that
12 essentially ES&S is asking for, will materially
13 impact the schedule.

14 And frankly Mr. Buchanan would prefer that if
15 there's going to be any steps that can ensure due
16 process is afforded to all the parties, we'd
17 rather handle it up front than opposed to having
18 this ultimately resolved in a different forum or
19 perhaps delayed because we have to go back and fix
20 something that happened earlier.

21 I want to comment very briefly on what this
22 is really about. This is not merely or simply a
23 discovery matter. And a very important interest
24 that has not been addressed is the interest in
25 preserving evidence that will substantiate my

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1 client's claim to his seat.

2 Now, as a matter of Florida law, the machines
3 that -- and there's a bait and switch going on
4 here, Your Honor. It's not simply that they want
5 to look at a hard copy of the source code, they
6 want to crack open the machines, they want to run
7 tests, they want to run programs on the software,
8 debugging programs that fundamentally change the
9 nature of that software and could impact the data.
10 That data is the evidence in this case.

11 So we have a very serious concern that
12 Plaintiffs have not offered any plan as to how
13 they would protect those materials. Now Your
14 Honor may not be aware, but just yesterday
15 Plaintiffs filed a motion where they want to
16 compel not just the software, but they want the
17 electronic version, they want the machines.
18 They've offered to buy the machines and the PEDs
19 that were used, Your Honor, so they can run their
20 tests.

21 Now, I haven't been practicing nearly as long
22 as the other counsel at this table, but I can tell
23 you that I am not familiar with any case where a
24 party's offered to buy the evidence so they can
25 run whatever tests they want on it. I'm glad to

1 hear Mr. Coffey suggest that an evidentiary
2 hearing is warranted. I think it is. Because
3 there is some unanswered questions and I'm not
4 suggesting that I agree that ES&S needs a full
5 day, I don't know. But with this many lawyers in
6 the room, we probably do. Because it's going to
7 be tough to get anything done with this group,
8 myself included.

9 However, Your Honor, Plaintiff does not say
10 the nature of the bug, only in the most general
11 sense. They don't say what type of tests that
12 they designed that would test for those particular
13 bugs and they don't say what type of safeguards
14 that they would implement to ensure that evidence
15 doesn't get destroyed. These are very serious
16 questions that we want to address in an
17 evidentiary hearing.

18 We're happy to provide further briefing on
19 that in advance of the ultimate hearing on this
20 motion, but these are things that Your Honor needs
21 to consider before we just decide whether in fact
22 there is an evidentiary hearing that should be
23 heard or when it should be heard.

24 And, frankly, if we are going to do a quick
25 hearing, then what I would like is the opportunity

1 for us to depose Mr. Walloch. And we can depose
2 him any day of the week before the hearing even if
3 it's heard next Friday.

4 **THE COURT:** Anybody else out there want to
5 say something?

6 **MR. BURHANS:** Thank you, Your Honor.

7 **THE COURT:** Okay.

8 **MR. COFFEY:** Judge, I would just briefly
9 respond to the last point in terms of the
10 machines. Sarasota's, of course, no longer using
11 those machines after 2007. The voters want a
12 paper trail. And it's our understanding that no
13 more than half of them are needed for any reason
14 at this point because there will be some local
15 elections.

16 And we were simply responding to the
17 allegation that a comprehensive testing of the
18 machines could alter the future feasibility.
19 Again, that's something of a moot point since most
20 of those machines aren't going to be or aren't
21 needed anymore by Sarasota County.

22 And I don't view a three-hour hearing, which
23 is what is set aside for Friday, as a quick
24 hearing. I think that a focused hearing and
25 focused presentations, we could get to the

1 threshold questions. And they are threshold
2 issues of what's relevant and what discovery we
3 ought to have in this case. Thanks, Judge.

4 **THE COURT:** Well, what we have scheduled for
5 next Friday at this point in time are two motions
6 to dismiss, one filed by Secretary of State, one
7 filed by the -- one filed by Cobb and one filed by
8 Roberts. Also a motion to compel, motion for
9 protective order. And certainly an evidentiary
10 hearing is probably required as to the reasonable
11 necessity of this information. I think everybody
12 that reads the case law will think, if they really
13 sit down and read it, will agree to that.

14 Here's what I propose to do because I don't
15 think y'all can do it in three hours next Friday.
16 We're going to leave -- so I'm going to partially
17 grant the motion. The two motions to dismiss are
18 still on for next Friday. The motion to compel,
19 motion for protective order which will include any
20 evidentiary hearing that may be required on the
21 issue of reasonable necessity.

22 There is no issue on whether or not we have a
23 trade secret here. Everybody sit up and say
24 that's a trade secret, so for the -- it's a trade
25 secret. That will commence Monday, I believe

1 that's December 19th, at 1 o'clock. I would
2 sincerely hope that you all will be through that
3 day, but if you're not, then December 20th we will
4 start back up at 9:00 and go till noon at which
5 time you will be through.

6 All right. Who's going to draft that up?
7 Mr. Thomas.

8 **MR. THOMAS:** We will take care of that, Your
9 Honor.

10 **THE COURT:** Okay. Just run it by opposing
11 counsel before it's submitted to me. Okay.

12 **MR. THOMAS:** Let me make sure I do
13 understand. You're going to have an evidentiary
14 hearing that will commence Monday, December 19th,
15 at 9:00 a.m.?

16 **THE COURT:** No, no. Monday, December 19th,
17 at 1 o'clock p.m.

18 **MR. THOMAS:** 1:00 p.m.

19 **MR. BURHANS:** Excuse me, Your Honor, Monday
20 is the 18th.

21 **THE COURT:** Monday's the 18th. Well, wait a
22 minute. Tuesday the 19th. If you're not through
23 by a reasonable time that day, then we'll start at
24 9 o'clock the following day. Courtroom to be
25 announced because I have no idea. Because I will

1 be in Apalachicola all next week until I come back
2 for y'all's hearing.

3 **MR. THOMAS:** We will draft that up and
4 circulate it, Your Honor, and get it to you.

5 **THE COURT:** Fair enough. Anything else?
6 Nothing else. Y'all have a good day.

7 (Hearing concluded at 2:58 p.m.)

8 * * *

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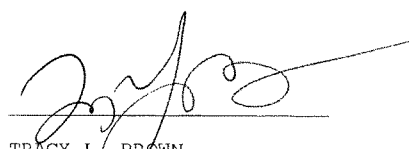
CERTIFICATE OF REPORTER

STATE OF FLORIDA:

COUNTY OF LEON:

I, TRACY L. BROWN, do hereby certify that the foregoing proceedings were taken before me at the time and place therein designated; that my shorthand notes were thereafter translated under my supervision; and the foregoing pages numbered 1 through 50 are a true and correct record of the aforesaid proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor relative or employee of such attorney or counsel, or financially interested in the foregoing action.

DATED THIS 10th day of December, 2006.

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Tab 21

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative
in Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs.

CASE NO. 2006 CA 002973

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, et al.,

Defendants.

ELLEN FEDDER, et al.,

Plaintiffs,

vs.

CASE NO. 2006 CA 002996
(Consolidated)

TOM GALLAGHER, et al.,

Defendants.

DEFENDANT DENT'S ANSWER TO PLAINTIFF JENNINGS
FIRST AMENDED COMPLAINT TO CONTEST ELECTION

COMES NOW, by and through undersigned counsel, Kathy Dent
as Supervisor of Elections in Sarasota County, Florida, and
responds to the Complaint filed by the Plaintiff herein,
Christine Jennings, and with respect to each paragraph, states
as follows:

1. Admit that this is a contest of elections, otherwise denied.

2. Denied.

3. Admit that the "Voter's Bill of Rights" is posted at each polling place and speaks for itself, otherwise, denied.

4. Admit.

5. Admit.

6. Admit.

7. Admit.

8. Admit.

9. Admit.

10. Admit.

11. Admit.

12. Admit.

13. Admit.

14. Admit.

a. Admit that iVotronic voting systems were used in Sarasota County in the 2006 General Election. Admit that ES&S provides voting equipment to other Florida counties, otherwise denied.

b. Admit that ES&S has trade secret and proprietary information in its voting systems and equipment and has an interest in this proceeding, otherwise without knowledge, therefore denied.

15. Admit.
16. Admit.
17. Admit.
18. Admit machine recount, otherwise without knowledge.
19. Admit that a manual recount was undertaken in this race, otherwise without knowledge.
20. Admit that undervotes were cast in this race and that Section 97.012(37), F.S., speaks for itself, otherwise without knowledge.
21. Denied.
 - (a) Denied.
 - (b) Admit the numbers as stated, otherwise denied.
 - (c) Admit the numbers as stated, otherwise denied.
 - (d) Admit the numbers as stated, otherwise denied.
 - (e) Admit the numbers as stated, otherwise denied.
 - (f) Without knowledge, therefore denied.
22. Admit that Sarasota County has used the iVotronic voting system since 2001 in numerous elections and that the county charter amendment did pass on the November ballot, otherwise denied.
23. Denied as to the characterization of the undervotes in Sarasota County and elsewhere. Admit that codes and files are escrowed in the State of Florida pursuant to Florida law, otherwise denied.

24. Admit that Defendant alerted voters to ballot composition and that ballot form did not cause significant undervotes, otherwise without knowledge.

25. Denied other than to admit that as Supervisor of Elections, Defendant records and maintains incident reports with respect to the elections.

26. Without knowledge, therefore denied.

27. Admit that the permanent record of each voter's vote cast is completed upon pressing the vote button, otherwise without knowledge, therefore denied.

28. Any problems observed by the poll watchers are memorialized by incident reports, otherwise without knowledge, therefore denied.

29. Admit any contents of "Incident Report Forms" that were prepared, otherwise denied.

30. Admit the contents of any official forms maintained by Sarasota County Supervisor of Elections, otherwise denied.

31. Denied.

32. Denied.

33. Defendant incorporates by reference responses to paragraphs 1-32.

34. Denied.

35. Denied.

36. Denied.


37. Denied.

AFFIRMATIVE DEFENSES

1. The voting equipment used by Sarasota County in the November 2006 General Election was certified for use in Florida by the State of Florida and was operated in accordance with the directions and specifications of the manufacturer and the pertinent Florida Statutes and rules of the Florida Department of State, Division of Elections.

2. The Sarasota County ballot utilized in the November 2006 General Election was in conformity with the Florida Statutes and the rules of the Department of State, Division of Elections, providing for and controlling ballot form and design.

Respectfully submitted this 12th day of December, 2006.



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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by Electronic Transmission or Facsimile and U.S. Mail on this 12th day of December, 2006, to:

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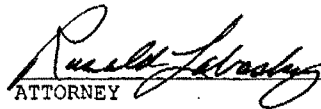
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Tab 22

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative
in Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs.

CASE NO. 2006 CA 002973

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, et al.,

Defendants.

ELLEN FEDDER, et al.,

Plaintiffs,

vs.

CASE NO. 2006 CA 002996
(Consolidated)

TOM GALLAGHER, et al.,

Defendants.

**DEFENDANT DENT'S RESPONSE TO PLAINTIFF JENNINGS'
MOTION TO COMPEL PRODUCTION OF ITEMS WITHIN THE CUSTODY
AND CONTROL OF THE SARASOTA COUNTY DEFENDANTS**

Defendant, Sarasota County Supervisor of Elections Kathy
Dent ("Dent") hereby responds to Plaintiff Christine Jennings'
("Jennings") Motion to Compel Production of Items Within the
Custody and Control of the Sarasota County Defendants (the
"Motion to Compel") and in support thereof, states:

1. On November 20, 2006, Jennings propounded her "Request for Production of Documents and for Inspection of Tangible Things" (the "Request to Produce") on Dent and other Defendants in this proceeding. Dent timely produced some of the documents requested by Jennings. On December 5, 2006, Dent served her response to the Request to Produce in which she raised objections to the production of several of the requested items, particularly election equipment manuals, equipment and supporting documentation. On December 7, 2006, Jennings filed her Motion to Compel. Dent hereby responds to several issues raised in the Motion to Compel.

Trade Secrets

2. The election equipment that is subject to the Motion to Compel clearly contains proprietary trade secrets that are subject to protection under Section 90.506, Florida Statutes. Dent has a contractual relationship with Election Systems & Software, Inc. ("ES&S"), the owner of the trade secrets. Accordingly, Dent acting as a de facto agent for ES&S, properly objected to Jennings' Request to Produce.

3. ES&S was not a named defendant in this proceeding until Jennings filed her First Amended Complaint to Contest Election on November 30, 2006. Accordingly, at the time Dent filed her objection to the Request to Produce, it was not clear what position ES&S would take in this proceeding. It is now

apparent that ES&S intends to vigorously protect its proprietary trade secrets, including those trade secrets included in Jennings' Request to Produce directed towards the election equipment manuals and supporting documentation in Dent's possession. Thus, while Dent believes that she properly objected to ES&S's de facto agent, that issue is now moot.

4. Accordingly, Dent expects ES&S to lead in asserting privilege under Section 90.506, Florida Statutes. Dent will play only a secondary role in that dispute and, will of course, abide by any order issued by this Court.

Payment for Election Equipment

5. In her response to the Request to Produce, Dent suggested that Jennings should be required to purchase the election equipment requested and which will be handled by the Plaintiffs. In her Motion to Compel, Jennings has agreed "to purchase one iVotronic machine and one PEB so that the equipment can be physically opened and inspected." Motion to Compel at 4. Jennings further agreed to "post a bond to ensure that the eight other iVotronic machines and related equipment are returned to Sarasota County undamaged." Id. It is Dent's position that Jennings should be required to pay for all election equipment: (a) for which she proposes to perform invasive or destructive testing; (b) that loses a warranty because of the proposed

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testing; or (c) that is in anyway utilized by Plaintiffs without Defendant's specific approval and oversight.

Respectfully submitted this 12~~th~~ day of December, 2006.



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Tab 23

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

CASE NO. 2006-CA-2973

Consolidated with Case No. 2006-CA-2996

vs.

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher and State Senator Daniel Webster,
et al.,

Defendants.

**DEFENDANT ELECTION SYSTEMS & SOFTWARE, INC.'S ANSWER TO
PLAINTIFF JENNINGS' FIRST AMENDED COMPLAINT TO CONTEST ELECTION**

Defendant Election Systems & Software, Inc. ("ES&S") files this answer to Plaintiff
Jennings' First Amended Complaint to Contest Election (the "First Amended Complaint").

FIRST DEFENSE

Plaintiff Jennings has failed to state a cause of action or claim against ES&S.

SECOND DEFENSE

ES&S is not a proper party to an election contest under Section 102.168, Florida Statutes.
That statute excludes ES&S from the list of proper and indispensable parties to such an election
contest. Further, ES&S has no interest in the ultimate outcome of the proceeding (that is, ES&S
has no interest in which candidate is ultimately declared the winner), and has no lawful authority
to provide Plaintiff Jennings the remedy she seeks should she prevail.

THIRD DEFENSE

ES&S responds to the like-numbered paragraphs of the First Amended Complaint as follows:

1. Denied, except admitted that this purports to be an action to contest the Elections Canvassing Commission's November 20, 2006 certification that Vern Buchanan received 369 more votes than Christine Jennings in the election for the United States House of Representatives for Florida's Thirteenth Congressional District.

2. Denied.

3. Denied, except admitted that Section 101.031(2), Florida Statutes, which speaks for itself, is quoted accurately in the first sentence.

Common Allegations

4. Denied, except admitted as to the purported nature of the action and that Section 102.168, Florida Statutes, which speaks for itself, is quoted accurately.

5. Admitted.

6. Admitted.

7. Admitted.

8. Without knowledge, and therefore denied, except admitted that paragraph 8 references Sections 102.111 and 102.168(4), Florida Statutes, which speak for themselves.

9. Without knowledge, and therefore denied, except the last sentence in paragraph 9 is admitted.

10. Admitted.

11. Admitted.

12. Admitted.

13. Denied, except admitted that Vern Buchanan is the Republican candidate to be the Representative in Congress from Florida's Thirteenth Congressional District, and that paragraph 13 references Section 102.168(4), Florida Statutes, which speaks for itself.

14. Admitted.

14.a. Admitted.

14.b. Denied, except the following is admitted: ES&S has received revenue in excess of a million dollars conducting business in Florida; ES&S seeks to maintain public confidence in its equipment; and ES&S is the owner of trade secrets with respect to the software and source codes related to the iVotronic machines.

15. Admitted.

16. Admitted.

17. Without knowledge, and therefore denied, except admitted that the election results speak for themselves.

18. Without knowledge, and therefore denied, except admitted that a machine recount was ordered, and that the election results speak for themselves.

19. Without knowledge, and therefore denied, except admitted that a manual recount was ordered, and that the results of the election and machine recount speak for themselves.

20. Without knowledge, and therefore denied, except the following is admitted: an undervote was reported; an "undervote" is defined in Section 97.021(37), Florida Statutes, which speaks for itself; and the election results speak for themselves.

21. Without knowledge, and therefore denied, except admitted that the election results speak for themselves.

21.a. Without knowledge, and therefore denied, except admitted that the election results speak for themselves.

21.b. Without knowledge, and therefore denied, except admitted that the election results speak for themselves.

21.c. Without knowledge, and therefore denied, except admitted that the election results speak for themselves.

21.d. Without knowledge, and therefore denied, except admitted that the election results speak for themselves.

21.e. Without knowledge, and therefore denied, except admitted that the election results speak for themselves.

21.f. Without knowledge, and therefore denied, except admitted that the election results speak for themselves.

22. Denied, except admitted as to the first and second sentences of paragraph 22, and admitted that the proposed charter amendment and election results speak for themselves.

23. Denied, except admitted that source code for the ES&S iVotronic voting system is escrowed with the Florida Department of State.

24. Denied, except without knowledge as to the third sentence of paragraph 24, and therefore denied.

25. Denied.

26. Without knowledge, and therefore denied.

27. Denied, except admitted that the information voters see on the touch-screen of an electronic voting machine is transferred from temporary into permanent memory when the machine's "vote" button is pressed.

- 28. Without knowledge, and therefore denied.
- 29. Without knowledge, and therefore denied.
- 30. Without knowledge, and therefore denied.
- 31. Without knowledge, and therefore denied.
- 32. Denied.

Count I

33. ES&S realleges and incorporates by reference its responses contained in paragraphs 1 through 32 above.

- 34. Denied.
- 35. Denied.
- 36. Denied.
- 37. Denied.

38. The Prayer for Relief and all allegations not specifically admitted herein are denied.

FOURTH DEFENSE

Any undervote in Sarasota County was due to ballot layout and factors other than a malfunction in the iVotronic voting system and software.

FIFTH DEFENSE

There is no reasonable necessity for the disclosure of the iVotronic voting system source code and proprietary equipment, which constitute trade secrets of ES&S. For instance, there are other reasonable means for determining whether the iVotronic voting system malfunctioned, including parallel tests like those conducted by the state of Florida. Other tests and analyses

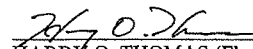
show that any undervote was due to factors such as ballot layout, not a malfunction in the iVotronic voting system.

WHEREFORE, having answered, ES&S respectfully requests the denial of the request in paragraph 2 of the Prayer for Relief for disclosure of the iVotronic voting system source code and proprietary equipment, and the dismissal with prejudice of the First Amended Complaint as to ES&S. ES&S further requests such other relief that this Court deems just and proper.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been sent by facsimile or electronic transmission and U.S. Mail on this 14th day of December, 2006, to all counsel of record on the attached mailing list.

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Tab 24

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

CASE NO. 2006-CA-2973
Consolidated with Case No. 2006-CA-2996

vs.

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher and State Senator Daniel Webster,
et al.,

Defendants.

FILED
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CLERK CIRCUIT COURT
LEON COUNTY FLORIDA

ORDER

THIS CAUSE having come before the Court upon Defendant Election Systems & Software, Inc.'s Motion Requesting Fifteen (15) Days to Respond to Plaintiff's Request for Production, Motion to Compel Production and Motion for Entry of Protective Order and Request for Evidentiary Hearing (the "Motion"), and the Court having considered the memoranda and arguments of counsel, and being otherwise fully informed in the premises, it is

ORDERED AND ADJUDGED that the Motion of Election Systems & Software, Inc. ("ES&S") is granted in part and denied in part, as follows:


1. Matters to be considered at the hearing scheduled for December 15, 2006 shall be the following: Defendant Sue Cobb's Motion to Dismiss Complaint for Failure to State A Claim in Case No. 2996 and Defendants Sue Cobb and Dawn Robert's Motion to Dismiss For Failure



to State A Claim in Case No. 2973, both of which were noticed for hearing on December 6, 2006; and

2. An evidentiary hearing on Plaintiff Jennings' Request for Production, Motions to Compel and Motion for Protective Order, which will be limited to the issue of the reasonable necessity for the production of ES&S' trade secret materials, including ES&S' source code and proprietary equipment, will be held starting at 1:00 p.m. on Tuesday, December 19, 2006, and will continue, if necessary, on Wednesday, from 9:00 a.m. until noon.

DONE AND ORDERED in Chambers in Tallahassee, Leon County, Florida, this 14th day of December, 2006.


Circuit Judge William L. Gary

✓ Copies furnished to Counsel of Record (14)

Tab 25

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

Draft: 12/18/2006 1:02 PM

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

CASE NO. 2006-CA-2973
Consolidated with Case No. 2006-CA-2996

vs.

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher and State Senator Daniel Webster,
et al.,

Defendants.

**DEFENDANT ELECTION SYSTEMS & SOFTWARE, INC.'s PRE-HEARING
MEMORANDUM OF LAW IN OPPOSITION TO PLAINTIFFS' MOTIONS TO
COMPEL PRODUCTION AND FOR ENTRY OF A PROTECTIVE ORDER**

Defendant Election Systems & Software, Inc. ("ES&S") files this Pre-Hearing Memorandum of Law in Opposition to Plaintiffs' Motions to Compel Production and for Entry of a Protective Order. In particular, ES&S files this Memorandum of Law to state its grounds for opposing Plaintiff Jennings' Motion to Compel Production of Items Within the Custody and Control of the State, Plaintiff Jennings' Motion to Compel Production of Items within the Custody and Control of the Sarasota County Defendants, and Voter Plaintiffs' Motion to Compel served on December 7, 2006, as part of Voter Plaintiffs' Joinder To Jennings' Motion to Compel (collectively, the "Motions to Compel") to the extent that these motions seek the production of the stipulated trade secrets of ES&S.¹ The stipulated trade secrets of ES&S consist of the

¹ Voter Plaintiffs' Request for Production seeks material in addition to that identified in Plaintiff Jennings' Motions to Compel. To the extent those additional requests call for production of documents and information pertaining to

following: (i) iVotronic voting machines; (ii) personalized electronic ballots (“PEBs”); (iii) communications pack; (iv) the PEB reader; (v) the source code to the iVotronic system; (vi) the source code to all elements of the Unity software suite; (vii) the source code to the personalized electronic ballots; (viii) the firmware and software mounted on the iVotronic voting machines in the custody of Sarasota County; (ix) all files loaded onto an iVotronic machine as part of the “ballot programming process”; (x) materials pertaining to development tools, scripts, “makefiles” and other software used in the November 2006 general election in Sarasota County to compile, debug and test the iVotronic system, PEBs, and elements of the Unity software suite; (xi) user manuals, operator manuals and training materials related to the use, operation or maintenance of any part of the iVotronic system, the Unity software suite or any of its elements, or the PEBs; and (xii) any materials necessary to extract and read the “three redundant memories” contained within the iVotronic machines (collectively, the “Source Code and Proprietary Technology”).

I. BACKGROUND AND CHRONOLOGY

Plaintiff Christine Jennings (“Jennings”) and Defendant Vern Buchanan (“Buchanan”) participated as candidates in the November 7, 2006 general election for the Thirteenth Congressional District of Florida. When the election was concluded, Buchanan had more legal votes cast in his favor than Jennings.² On November 20, 2006, the Elections Canvassing Board certified Buchanan as the winner of the election for the Thirteenth Congressional District.

The instant lawsuit was filed on November 20, 2006. On November 21, 2006, Plaintiffs Ellen Fedder, Lance Jones, Ernest Lasche a/k/a Mike Lasche et al. (hereinafter “the Voter

ES&S’ Source Code and Proprietary Technology, ES&S’ opposes the Voter Plaintiffs’ Motion to Compel production of the additional documents and information on the grounds set forth in this memorandum.

² Pursuant to state law, there were subsequent machine and hand counts ordered to verify the results of the election.

Plaintiffs") filed a separate action making similar allegations as those set forth in Jennings' lawsuit. ES&S was not named as a party on the original Jennings' complaint or in the Voter Plaintiffs' complaint. Also on November 20, 2006, Jennings propounded a Request for Production of Documents and for Inspection of Tangible Things and a Motion to Compel Expedited Discovery, which were directed to Defendants Elections Canvassing Commission; the Sarasota County Canvassing Board; Kathy Dent, Sarasota's Supervisor of Elections; Sue M. Cobb, Secretary of State; and, Dawn Roberts, Director of the Division of Elections of the State of Florida (collectively, the "State Defendants"). Voter Plaintiffs served Requests for Production and Inspection on the State Defendants on December 1, 2006.

In the Requests for Production, Jennings and Voter Plaintiffs sought to obtain the items set forth above that the State Defendants hold in escrow as well as hardware and software that the state holds pursuant to licensing agreements with ES&S. All parties have stipulated that these items (referred to collectively as "the Source Code and Proprietary Technology") constitute proprietary, trade secret information of ES&S.

Jennings appeared before this Honorable Court on November 21, 2006 seeking an order from the Court to compel expedited disclosure of the Source Code and Proprietary Technology. After hearing argument of counsel, the Court denied Jennings' Motion to Compel Expedited Discovery. The Court directed Kathy Dent, the Sarasota County Supervisor of Elections (hereinafter the "Supervisor" to allow Jennings and Buchanan an opportunity to observe parallel tests that were to be conducted on the voting equipment and allowed fifteen (15) days for the State Defendants to respond to the Request for Production. In regard to ES&S, the Court stated as follows: "As far as the source code, I am denying your Motion without prejudice. **I think**

ES&S needs an opportunity to be heard.” (Appendix Tab 1.) The Court then suggested that Jennings serve ES&S with a subpoena *duces tecum*. (*Id.*)

On November 28, 2006, the Voter Plaintiffs’ lawsuit was consolidated with the Jennings lawsuit. Also, on November 28, 2006, the State Defendants conducted the first post-election test on the iVotronic machines. On November 30, 2006, Secretary of State Sue M. Cobb (hereinafter “Secretary Cobb”) issued a statement regarding this test in which she confirmed that “no anomalies were discovered in the machines; they functioned exactly as designed.” (Appendix Tab 2.) The second parallel test was conducted on December 1, 2006 on machines used in the November elections. This test also demonstrated that the machines functioned as designed. Jennings was allowed to observe both tests.

Plaintiff Jennings did not serve ES&S with a third-party subpoena as suggested by the Court. Instead, she waited until November 30, 2006, to file a First Amended Complaint which named ES&S as a party. ES&S was served December 4, 2006. On December 6, 2006, ES&S filed a motion which requested fifteen (15) days to respond to Plaintiffs’ Motions to Compel and requested an evidentiary hearing. The Court heard this motion on December 8, 2006. The Court did not make a specific ruling as to the time allowed to file a written, responsive memorandum, but did set an evidentiary hearing, commencing on December 19, 2006, and concluding no later than noon on December 20, 2006.

II. SUMMARY OF ARGUMENT

a) Introduction: ES&S is not a proper party to an election contest under Section 102.168, Florida Statutes. It is apparent that Jennings’ strategy in including ES&S in the First Amended Complaint is designed so that Jennings can argue to this Court that the quantum of proof necessary to obtain the requested discovery is extremely low, and that she need only establish

that the items requested are “reasonably calculated to lead to admissible evidence.” Respectfully, this argument misrepresents the law applicable to this issue.

As will be discussed, *infra*, Florida and other states have recognized that in order to allow discovery of trade secrets, the Court must hold an evidentiary hearing and consider all relevant factors, including the potential impact of disclosure upon the holder's business, the protection afforded by patent or copyright laws, and the necessity of disclosure to the presentation of the Plaintiffs' case.³ The conditions for the exercise of the Court's power to compel discovery of trade secrets is governed by the facts of each case. If disclosure of a trade secret will depreciate its value, the holder should not be compelled to disclose the trade secret where to do so is not essential to the ends of justice. Generally, Florida courts have held that in order to obtain disclosure of trade secrets, a party seeking production must show a “reasonable necessity” to obtain the information. As part of the methodology for determining reasonable necessity, Florida courts must analyze whether the information is sufficiently relevant and necessary to the Plaintiffs' case to outweigh the harm disclosure would cause to the person from whom he is seeking the information.

The instant case presents an issue of first impression in that, because this is an election contest, there is an additional compelling interest that the Court must consider; to wit, the interest of the State and its voters to restrict access to sensitive information in order to maintain the integrity and security of its election processes.

ES&S respectfully submits that the reason why Jennings' strenuously and incorrectly argues that her burden of proof in this case is extremely low is because she cannot produce

³ Florida courts have held that in the context of a Request for Production or disclosure of proprietary information, the party resisting production must first establish that the requested materials are trade secrets. However, because Plaintiffs have acknowledged that the subject proprietary equipment and technology are trade secrets, this Memorandum does not address the requirements necessary to prove this element.

sufficient credible evidence to demonstrate that there is a reasonable necessity to defeat ES&S' and the State's compelling interests in this matter.⁴ In effect, Jennings' evidentiary showing consists of bare-bones allegations of machine malfunction in their complaint, buttressed by bullet points replete with unreliable anecdotal evidence, and two experts' declarations which essentially state that machine malfunction might be a cause for part of the alleged undervote.⁵ However, the experts' declarations do not identify any specific flaw which they believe may have caused the machine to malfunction. In effect, Jennings merely wishes to engage in a "fishing expedition."

Plaintiffs have argued that there is little probability of harm to ES&S as a result of disclosure of the proprietary equipment and technology to a private party. Plaintiffs assert that because they are not a competitor of ES&S, there is no conceivable harm that can result from their access to the requested materials. This argument is disingenuous at best. The Plaintiffs, collectively composed of Jennings and organizations with well-defined political agendas, as well as the experts that they have employed, share one common goal – to cause every state in the nation to decertify DRE Voting Systems and discontinue their use. In effect, Plaintiffs are misusing a judicial process to obtain information that they can manipulate and utilize in a political debate. In this context, disclosure of this proprietary equipment and technology to private parties whose political aim is to put DRE Election Systems providers out of business has a greater potential for harm than disclosure to a competitor. ES&S acknowledges and respects Plaintiffs' First Amendment right to impact the political process and advocate for whatever

⁴ For example, a significant part of Plaintiff Jennings' Motion to Compel is dedicated to explain, in detail, that the reason Plaintiff Jennings needs several election machines, additional hardware and part of the software, is so they may conduct parallel testing simulating Election Day voting. Because these tests have been performed by the State on November 28 and December 1, and the results are available for the Plaintiff Jennings' review, the evidence demonstrates that there is no "reasonable necessity" to allow Plaintiffs' exclusive and unfettered access to the voting equipment and software.

⁵ It is interesting to note that one of Jennings' experts has testified in previous proceedings that the type of anecdotal evidence submitted by the Plaintiffs is inherently unreliable.

system of election they believe is appropriate. However, we respectfully submit that the judicial branch is not the forum in which to maintain that debate, nor should a judicial process be abused and misused for political purposes.

b) Section-by-Section summary: Below ES&S respectfully sets forth a review of the legal standards as well as the evidence which demonstrates that there is no “reasonable necessity” to disclose the source code and proprietary technology to the Plaintiffs.

1) Section III is a Memorandum of Law that discusses the legal standards applicable to this case. In this Section, ES&S provides this Honorable Court with a review of Florida case law, which makes clear that the burden of proof imposed upon the Plaintiffs is significant and that an analysis of this issue involves a balancing of interests, based on evidence particular to the case.

2) In Section IV, ES&S details the pre-certification processes, the pre-election testing and post-election tests, to which the ES&S systems have been submitted, which collectively provide clear and convincing evidence that the iVotronic machines and technology functioned correctly and without malfunction during the subject election. Additionally, we note the fact that the State is in the process of finalizing the protocols for its own independent source code review. Therefore, even if this Court were to conclude that there is some justification to require a source code review, the evidence demonstrates that there is no “reasonable necessity” to disclose the proprietary equipment and technology to the Plaintiffs, since the State will be performing that analysis independently. As will be further explained in the evidentiary hearing, if the Court believes that an additional assurance of an independent and unbiased analysis is warranted, ES&S does not object to the Court's appointment of its own independent expert to oversee the

State's upcoming source code review process, and report directly to the Court, provided that adequate protective measures are imposed.

3) Finally, in Section V, we demonstrate to the Court that there is compelling evidence as to the real cause for the undervote, which has nothing to do with machine malfunction.

III. THE EVIDENTIARY STANDARD AND FINDINGS NECESSARY FOR DETERMINING THE REASONABLE NECESSITY OF THE PRODUCTION OF TRADE SECRETS

Because all parties have stipulated that the Source Code and Proprietary Technology Plaintiffs seek to compel are trade secrets, Plaintiffs now bear the burden to establish an exception to the trade secret privilege that would allow them to obtain this material notwithstanding the privilege. The question is not simply whether the privileged material is relevant to Plaintiffs' case, or calculated to lead to the discovery of admissible evidence, because if that were all Plaintiffs had to show, then the privilege would mean nothing. Indeed, even non-privileged material is not discoverable if it has no connection to the issues in the case. Logically, then, Plaintiffs must show more than mere relevance to obtain material that is privileged.

In this regard, the commercial value of trade secret material to a company arises in large measure because it is secret and not accessible to competitors, potential competitors or others who might use the information to the detriment of the company or for their own advantage. In other words, a trade secret is valuable to a company because its confidential nature gives the company the exclusive right to use it. Allowing discovery of a trade secret and its dissemination to third parties (such as Jennings' expert who, as a software programmer, is a potential competitor) in effect deprives the trade secret holder of this exclusive right, thereby undermining whatever advantage the holder had by reason of this exclusive right. This would be tantamount

to confiscating or taking the property of a business without any compensation to the owner for this loss.

Because of the potential dire consequences to a company if the trade secrets underlying its business are disclosed, courts have imposed a substantial burden on the party seeking to acquire a trade secret. In this regard, it is not sufficient merely to show that the trade secret information is relevant or would assist the party in establishing their claims. Rather, “the court must require the party seeking production to show reasonable necessity for the required materials” *Beck v. Dumas*, 709 So. 2d 601, 603 (Fla. 4th DCA 1998) (emphasis added). *See Goodyear Tire & Rubber Co. v. Cooley*, 359 So. 2d 1200, 1202 (Fla. 1st DCA 1978):

[T]he general rule is stated as follows: “. . . Disclosure of trade secrets is not required on discovery except in such cases and to such extent that the disclosure is indispensable to the ascertainment of the truth.” [Emphasis added]

As argued *infra*, Jennings’ own evidence indicates a lack of necessity. The affidavits of Jennings’ experts state that a machine malfunction is, at best, one of only several possible causes for the alleged undervote,⁶ and concede that their “software bug hypothesis” could be validated using the following alternative to examining the computer source code:

To validate this hypothesis, we might borrow voting machines, cast a large number of ballots (while videotaping everything we do), and compare the machine-reported totals to our original input. **If they differed in the Congressional race, this would be proof that the machines’ software was at fault.** [Emphasis added]

(Declaration of Dan S. Wallach at 4-5, attached as exhibit to Jennings’ First Amended Complaint) Significantly, the Department of State has already conducted the test suggested by

⁶ The Declaration of Charles Stewart, attached as exhibit to Jennings’ First Amended Complaint, states at page 35: “The level of undervoting experienced using electronic voting machines in Sarasota County for the 13th congressional district greatly exceeds the undervote rates that were estimated to have occurred in other well-established cases of voter confusion. This suggests a substantial possibility that the exaggerated undervote rates in this case were not solely due to voter confusion, but also caused by factors related to machine malfunction.”

Jennings' expert, which showed that a machine malfunction did not cause the alleged undervote. Although Jennings' experts argue that "[t]he best way to [prove the absence of relevant software bugs] would be to inspect the source code of the voting system," the fact that Plaintiffs may prefer this method of proof does not rise to the level of necessity. Indeed, Plaintiffs have no right to ES&S' trade secrets simply because they would prefer using this privileged information as opposed to another reasonable, and less harmful, method of proof that would also provide an answer to the question at issue. *Cf. Strasser v. Yalamanchi*, 669 So. 2d 1142, 1145 (Fla. 4th DCA 1996) (denying plaintiff's request for access to computer system to retrieve purged documents absent finding by court that "there is no less intrusive manner to obtain the information").

Even if a reasonable necessity for the trade secret information exists, the party seeking production must further show that the necessity for this privileged information to his case outweighs the harm that disclosure would cause the trade secret owner. *Inrecon v. Village Homes at Country Walk*, 644 So. 2d 103, 105 (Fla. 3d DCA 1994). In balancing these interests, courts give added protection to the trade secrets of persons who are not parties to the litigation. As a result, courts require a greater showing of necessity before allowing the production of a trade secret that will harm a stranger to the litigation. *Inrecon*, 644 So. 2d at 105:

"The rule that allows a party to request production of its opponent's records 'is in no sense designed to afford a litigant an avenue to pry into his adversary's business or go on a fishing expedition to uncover business methods, confidential relations, or other facts pertaining to the business.'" [Citations omitted] The foregoing observation applies with greater force where, as here, the discovery sought is from a witness, not a party. [Emphasis added]

Here, although ES&S has been named as a defendant, it is not a proper party to this election contest under Section 102.168, Florida Statutes, which excludes ES&S from the list of proper

and indispensable parties. Indeed, there is no reason to make ES&S a defendant, other than to facilitate the confiscation of its trade secrets, since ES&S has no lawful authority to provide Jennings the remedy she seeks in this lawsuit. Accordingly, a greater showing of necessity is required for Jennings to take ES&S' trade secrets.

Plaintiff Jennings has countered that the Court should afford less protection to ES&S' trade secrets in this case because she is not a competitor of ES&S. However, this ignores the fact that Jennings is proposing to hand ES&S' Source Code and Proprietary Technology to a computer expert who is a potential competitor. *Cf. Beck v. Dumas*, 709 So. 2d 601 (Fla. 4th DCA 1998) (computer developer argued that "to require it to produce the requested materials, particularly to a qualified software programmer and potential competitor . . ., would in effect be 'giving away the company'"). Here, even if the Court ordered Jennings' expert not to disclose ES&S' trade secrets to others, there is no protective measure that the Court could impose that could make the expert forget what he learned about ES&S' technology, creating the possibility that he could later use ES&S' trade secrets to his advantage. Further, if the Court gave Jennings' access to ES&S' trade secrets, it would also have to hand this technology to the Voter Plaintiffs, some of whom are organized for the purpose of opposing the use of electronic voting machines with an agenda in this case of causing harm to ES&S' business and good will. In short, there is the likelihood of great harm to ES&S if the Court orders the production of ES&S' trade secrets in this case.

In addition to the harm to ES&S, the Court must also take into account the harm that disclosure of ES&S' trade secrets will cause to the security of the voting systems used in Sarasota County and elsewhere in Florida. At present, in order to assure the security of these voting systems, only the authorized public officials at the Department of State have access to the

ES&S Source Code that is on file at that agency. Notably, pursuant to Section 101.5607(1)(d), Florida Statutes, the Florida Legislature intended to preclude persons outside the agency from obtaining this sensitive material. § 101.5607(1)(d) (“Section 119.071(1)(f) applies to all software on file with the Department of State”). See § 119.071(1)(f) (“[d]ata processing software obtained by an agency under a licensing agreement that prohibits its disclosure and which software is a trade secret . . . are exempt from s. 119.071(1) and s. 24(a), Art. I of the State Constitution”). However, if the Court orders the production of the ES&S’ Source Code to persons outside of the Department of State, it will no longer be possible to assure the integrity and security of the voting systems that rely on the ES&S technology.

Plaintiff Jennings also asserts that her burden of proof is necessarily minimal because this is merely a preliminary discovery issue rather than an issue that must be proved at trial. Although the existence of a privilege, or an exception to a privilege, is a preliminary question, the Court must still resolve the question based on the preponderance of evidence standard. That is, Plaintiff Jennings must prove the predicate findings which demonstrate the necessity or indispensability of the trade secret materials to her case by a preponderance of the evidence. *Cf. Eight Hundred, Inc. v. Florida Department of Revenue*, 837 So. 2d 574, 576 (Fla. 1st DCA 2003) (“the party seeking to abrogate the [attorney client] privilege has the burden to prove facts which would make an exception to the privilege applicable’ by ‘a preponderance of the evidence’”).

Finally, Jennings’ burden to prove a reasonable necessity cannot be avoided by the offer to enter into a protective order. The issue of the protective order is only relevant if the party seeking production first proves reasonable necessity and the Court orders production of the privileged materials, in which case a protective order can be entered to minimize the harm that

production would otherwise cause. § 90.506, Fla. Stat. (“[w]hen the court directs disclosure, it shall take the protective measures that the interests of the parties, and the furtherance of justice require”). See *Rare Coin-It, Inc. v. I.J.E., Inc.*, 625 So. 2d 1277 (Fla. 3d DCA 1993):

Production of the source code, without a showing and finding of reasonable necessity, would cause Rare irreparable harm. This is true even when the trial court orders production subject to a protective order.

See also *American Express Travel Related Services, Inc. v. Cruz*, 761 So. 2d 1206, 1209 (Fla. 4th DCA 2000).

IV. THERE IS NO REASONABLE NECESSITY TO GRANT PLAINTIFFS’ ACCESS TO ES&S PROPRIETARY MATERIALS

As discussed, *supra*, Plaintiffs request the production of the source code for the iVotronic system, to all elements of the Unity software system suite, and to all personal electronic ballots (“PEBs”) used in the November 2006 general election and/or escrowed with the Department of State under section 101.5607(a)(a), Florida Statutes.

Before discussing why Plaintiffs’ request should be denied, it may be helpful to understand how these various components work together. The iVotronic™ is a patented touch screen voting system, powered either by 120-volt AC current or a rechargeable battery cartridge. It is the unit that the voters cast their votes upon.

The Unity™ Election System is a software suite created by ES&S to format ballot layouts and program election equipment for use in conducting voting within a jurisdiction.

The PEB is a small handheld device used to open the machines, load ballot information, and reset the iVotronics between voters. When the voter is done, he or she presses a small red button at the very top of the iVotronic to cast the vote. The vote is then recorded to three internal flash memories that reside inside the machine. A fourth memory is a removable CompactFlash

("CF") card. During the election, the CF card holds audio files (for those with visual disabilities) and ballot definitions; vote data is written to the CF card when the machine is closed.

A. WHAT SOURCE CODE IS AND HOW THE IVOTRONIC USES IT

Source code is any series of statements or a fixed set of instructions written in some human-readable computer programming language. A computer program's source code is converted from human-readable form to an equivalent computer-executable form. If such computer-executable form is intended to be loaded onto and executed from a permanent or semi-permanent computer memory chip, as in the iVotronic, it is called "firmware." The firmware is designed to run any election that is created with the Unity software suite (i.e. election definition). The firmware, as a set of fixed instructions, will always behave in the same exact manner each time it is operated with and given the same exact conditions (e.g. Unity election definition, time, date, range of voter interactions, etc.). Physically testing a terminal or set of terminals, by having votes cast, recorded, and aggregated using the same election as the one in question, and conducted with all of the same conditions as a voter might encounter, observe and enact upon the iVotronic, will provide the same exact system results. Such a test will provide any indication or evidence as to whether there was problem with the terminal. If one wanted to ascertain whether or not the iVotronic operated properly, this is the type of validation that would be proper. It would be conclusive. Reviewing the iVotronic source code will not provide any more information than can be concluded by operating and testing the terminals.

B. THE CERTIFICATION OF THE IVOTRONIC SYSTEM HAS INVOLVED A REVIEW OF SOURCE CODE BY FEDERAL AND STATE AUTHORITIES

The iVotronic hardware, its software, and the Unity software suite are not available to the general public. Neither a government nor a consumer can walk into a CompUSA or Best Buy and grab a system off the shelf. The distribution of the hardware and software is tightly

regulated by both federal and state law and authorities. It is made available to and used by different governments only after undergoing rigorous federal and state certifications.

The Federal Elections Commission ("FEC") has substantive regulatory authority over equipment used in elections. Congress enacted the Help America Vote Act of 2002, Public Law 107-252, codified at 42 U.S.C. § 15301, et seq., establishing the Election Assistance Commission ("EAC") which has the power to provide for "the testing, certification, decertification, and recertification of voting system hardware and software by accredited laboratories." 42 U.S.C. § 15371(a)(1). The Act also authorizes a state, at its option, to "provide for the testing, certification, decertification, or recertification of its voting system hardware and software by the laboratories accredited by the Commission." 42 U.S.C. § 15371(a)(2).

The FEC has issued Guidelines, a set of standards and testing specifications which are used by an independent laboratory to test election hardware and software. The laboratory must test the hardware and software to see that it meets or exceeds FEC Guidelines. Only then does the hardware or software receive federal certification, technically referred to as "FEC Qualified." Only FEC Qualified hardware and software may be used for voting.

The state of Florida has its own voting systems standards and its own certification process. The iVotronic and the Unity software suite used in the election in Sarasota County were both certified by the state. The Florida standards are very similar to the federal standards. The Florida Department of State has issued certificates for Unity 2.4.4 and Unity 2.4.4.2, the software which was used by Sarasota County in the November 2006 election. (Appendix Tabs 3 & 4.)

Finally, when the certified hardware and software are delivered to the local government, it undergoes a system delivery test. The equipment and software, as certified by the NASED and the state, are evaluated to ensure that the delivered units conform to both the system

characteristics specified in the documentation and those demonstrated in the federal and state qualification and certification tests. The Unity 2.4.4 and Unity 2.4.4.2 were subject to delivery testing in Sarasota County and were accepted by the County.

C. SARASOTA COUNTY'S iVOTRONIC VOTING SYSTEM UNDERWENT EXTENSIVE TESTING PRIOR TO DEPLOYMENT FOR EARLY VOTING AND ELECTION DAY

The iVotronic system is continuously tested once it is placed in the hands of the local government. Under Florida law, voting equipment must undergo logic and accuracy testing prior to be used in an election. Under section 101.5612(2), at least 10 days prior to the commencement of early voting, the supervisor of elections of a County shall have the automatic tabulating equipment publicly tested to ascertain that the equipment will correctly count the votes cast for all offices and on all measures. Section 101.5612(4)(a)1 provides that either all or a sample of the devices to be used in the election shall be publicly tested. If a sample is tested, at least 2 percent of the touchscreen machines must be tested by holding a scripted, mock election with a pre-determined outcome. *Id.* The duties of the county canvassing board, after the logic and accuracy test, can be found in state statutes, as well.

(c) The canvassing board or its representative shall execute a written statement setting forth the tabulation devices tested, the results of the testing, the protective counter numbers, if applicable, of each tabulation device, the number of the seal securing each tabulation device at the conclusion of testing, any problems reported to the board as a result of the testing, and whether each device tested is satisfactory or unsatisfactory.

Section 101.5612(4)(c), Fla. Stat.

In the instant case, Kathy Dent, the Supervisor of Elections for Sarasota County, advertised that the logic and accuracy testing of the County's voting and tabulating equipment to be used in the November 7, 2006, General, Special, City of North Port, and City of Venice General elections would be conducted on Friday October 20, 2006, at 9 a.m. at the office of the

Supervisor of Elections in the Terrace Building at 2001 Adams Lane, Sarasota, Florida. (Appendix Tab 5.) The logic and accuracy test was conducted as advertised and the results were certified by the Sarasota County Canvassing Board on October 20, 2006. (Appendix Tab 6.) The result of the logic and accuracy test showed no problem with the iVotronic equipment or the Unity software.

D. SARASOTA COUNTY'S iVOTRONIC VOTING SYSTEM UNDERWENT EXTENSIVE TESTING AFTER THE ELECTION

Because of the unexpected number of undervotes for the 13th Congressional District race, the Florida Division of Elections (DOE) developed an extensive audit plan to ascertain if a hardware or software problem was the cause of this contest's undervote total. In order to do so, the Bureau of Voting Systems Certification (BVSC) conducted two "parallel tests."

A test script was developed to simulate the election in Congressional District 13 taking into consideration the voting experience of several voters that were described in news articles. BVSC requested each candidate to provide a list of two to four precincts that they believed warranted close examination. From this list of precincts, BVSC staff identified four iVotronic touchscreens (two from Buchanan's list⁷ and two from Jennings' list⁸) that experienced the highest undervote within their respective precinct.

BVSC conducted two parallel tests each consisting of four iVotronic touchscreens following the predetermined test script and a fifth iVotronic machine which would undergo an "ad hoc" vote selection process focused on the 13th Congressional District race. The first parallel test utilized a random selection of iVotronic machines from the pool of machines that were *not* deployed during the general election. The second parallel test utilized the iVotronic

⁷ The Buchanan organization recommended a random selection. BVSC performed this random selection utilizing MS Excel.

⁸ The Jennings' organization identified four precincts from which the machines should be taken.

machines from the precincts selected by Jennings and Buchanan, plus a fifth touchscreen from precinct 117 for the ad hoc exercise.

The first parallel test was conducted in Sarasota on Tuesday, November 28, 2006. On November 30, the Secretary of State issued an announcement stating that the first parallel test of the state audit of Sarasota County's voting systems has been successfully completed. Secretary of State Sue Cobb confirmed that, "No anomalies were discovered in the machines; they functioned exactly as designed." (Appendix Tab 2.) The audit team, working in conjunction with experts from both campaigns, resolved the handful of variations in the November 28 parallel test results by first verifying the script and then reviewing the video tape of the parallel test. All variations were a result of human error.⁹

On Friday, December 1, 2006, the second parallel test took place. This round of testing was conducted on touchscreen machines utilized in Sarasota County for precinct voting in the November General Election. This test also demonstrated that the machines functioned as designed.

E. THE STATE IS PREPARING TO DO A REVIEW OF THE iVOTRONIC SYSTEM

Currently, the state is in the process of finalizing and executing an agreement for a review of the ES&S source code with the FSU SALT Laboratory. The team that will conduct this review will consist of several experts who are not employed by Plaintiffs, ES&S, or Buchanan.

The Plaintiffs have argued that an "independent" review of the ES&S source code and proprietary technology is necessary to determine the cause of the undervote in this case. Clearly,

⁹ It is interesting to note that much of the anecdotal evidence proffered by Jennings consists of statements from voters who claim that they had determined their choices before going into the voting booth, with some even bringing a list with them to assist them in voting for the candidates of their choice. The BVSC parallel tests demonstrate that even DOE personnel, who played the role of voters in the test and who were given a script (like the lists that voters brought with them) and were aware of the purpose of the test, were prone to commit errors.

a source code review conducted by Plaintiffs who have a well defined position adverse to the use of DRE Electronic Voting Systems can hardly be characterized as “independent.” In contrast, an objective review by state officials that are vested with the statutory duty to maintain the security and integrity of the state's election system, including the confidentiality of certain sensitive information, provides a reasonable alternative to the Plaintiffs' biased approach. Plaintiffs have not produced any evidence, other than their own opinions, to show that the state officials who would be responsible for conducting this review are biased or otherwise unable to oversee a review process conducted by independent experts. Plaintiffs have also alleged that ES&S' goal is to secrete its trade secret information from every possible review, in order to infer that there is some flaw that ES&S must be trying to hide. This is simply not true. Indeed, as referenced *supra*, ES&S' Source Code and Proprietary Technology has already been subjected to multiple reviews by state and federal authorities. ES&S respectfully submits that in the event the Court finds that there is any justification to proceed with a source code review, the process that the state will shortly engage in satisfies that need. Indeed, to the extent that the Plaintiffs would persist, without justification or evidence, to claim that a source code review by the state would somehow not be “truly independent,” ES&S would not object to a process in which the Court appointed its own independent expert to observe the work performed by the state's independent experts. This individual could report directly to the Court under appropriate protections that maintain the confidentiality of the materials that he or she would have access to.

V. THE UNDERVOTE IN DISTRICT 13 WAS LIKELY THE RESULT OF POOR BALLOT DESIGN AND IMPLEMENTATION, RATHER THAN A FAILURE OF HARDWARE OR SOFTWARE

The Plaintiffs have presented the reports of two experts, Charles Stewart III and Dan S. Wallach, in support of their effort to obtain unfettered access to the iVotronic machines, software and source code. Professor Stewart's report contains several conclusions, some of which ES&S

does not quarrel. For instance, he notes that the undervote rate for the 13th Congressional District in Sarasota County was higher than other undervote rates observed in this race in other counties that comprised the district. ES&S concurs. However, Professor Stewart then engages in an extensive statistical analysis, hypothesizing that the use of the iVotronic machines may have caused an undervote of between 13,209 and 14,739 votes. Stewart does not supply any evidence that this was the result of a specific flaw or malfunction. Indeed, Stewart couches his hypothesis in language consistent with a conclusion that the undervote was caused by a bad layout of the ballot and not by any sort of mechanical problem or software defect.

In his Summary of Key Conclusions, Stewart uses the word “malfunctioned” to describe the cause of the undervote. However, in the substantive discussion, the hyperbole is gone and he characterizes what happened as a “problem.” See Stewart Declaration at 24. In fact, nowhere in pages 24 to 35 of his Declaration does Stewart identify a specific malfunction of the iVotronic machines. Later in his Declaration he admits that “voters can be misled by ballots that are challenging – or by subtle design features draw their attention away from the task at hand ...” *Id* at 39. In attempting to dispel the idea that bad ballot design caused the problem, Stewart asserts that the “butterfly ballot” used by Palm Beach County in the 2000 Presidential election confused less than one percent of voters. However, it should be pointed out that what Stewart describes as the butterfly ballot “mistake” rate is an understated estimate of this rate. When other manifestations of voter confusion are considered, i.e., overvotes, the butterfly ballot voter confusion rate is closer to 5 percent. Other examples from the 2000 presidential election reveal voter confusion rates of similar magnitude as that observed in Sarasota County in 2006. For example, the two-page presidential ballot used in Duval County in the 2000 general election was

associated with a county-wide overvote rate of 7.5 percent and an overvote rate of over 20 percent in 23 of its 268 precincts.

Rather than merely cataloguing a list of different, and often opposing hypotheses, or pointing to elections that have no parallel with the November 2006 election in Florida, the work of Professors Michael C. Herron, James Honaker, and Jeffery B. Lewis points to simple causes of the undervote: the ballot layout chosen by Sarasota County -- not ES&S.

The ballot in Sarasota County consisted of about 20 separate pages. The United States Senate race was on the first ballot page by itself and was headed by the word "Congressional" which was highlighted. The second screen showed the 13th Congressional District race above the word "State" which was also highlighted.

There are several factors which indicate that the undervote observed in Congressional District 13 was not the result of a systematic malfunction with the iVotronic, but instead point to a combination of poor ballot design choices and human error as the most likely explanation.

First, the unusually high undervote rate in the Congressional District 13 race is isolated to one county, Sarasota, among the five counties that contribute to the Congressional District. Statistical analysis of Congressional District 13 undervote patterns by precinct shows that Sarasota is significantly different than the other Congressional District 13 counties. Sarasota's uniqueness holds even when controlling for the presence of very old voters among Sarasota precincts. Although Sarasota had an unusually high undervote rate in the Congressional District 13 contest, it did not have a high undervote rate in any of the other top contests (U.S. Senate, governor, attorney general, chief financial officer, commissioner of agriculture).

Second, where Sarasota-like ballot formats were used elsewhere in Florida, similar undervote effects are observed. The ballot format responsible for Sarasota's Congressional

District 13 undervote is most closely approximated by the placement of the attorney general race among the ballots used in Charlotte, Lee, and Sumter Counties. Again, statistical analysis shows that these three counties had extremely high Attorney General undervote rates. In fact, the effect of ballot format on the undervote is greater among Attorney General votes in Charlotte, Lee, and Sumter than the corresponding Congressional District 13 effect in Sarasota.

Third, voters were prone to undervote on one or more races on the first ballot page that presented two or more contests; high undervote rates are regularly found on first ballot pages that combined multiple offices. For example, Jackson County used both iVotronic and optical scan voting on election day. Among top races, the iVotronic undervote rate is much different than the optical scan undervote rate only in the Attorney General and Chief Financial Officer races. On Jackson County's iVotronic machines, the Attorney General and Chief Financial Officer races appeared below the Florida governor race on the second page of the ballot following the U.S. Senate race which appeared alone on the first page.

Fourth, the effects described above are present but generally smaller for iVotronic machines using the bitmap screen style than for those using the text-based screen style. Consistent with the notion that voter confusion was compounded by layout effects, the evidence demonstrates that the clearer and more stylized graphic layout used on, for example, the Broward iVotronic machines (bitmap) produced smaller undervote effects than were found in the counties such as Sarasota, which used text-based ballot displays. The layout effect is detectable and contributed to the high undervote rate in the Sarasota County Congressional District 13 race.

Fifth, the regularly occurring high rate of undervoting in Sarasota County in the 13th Congressional District race varied depending on the presence of voter demographics. The

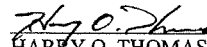
evidence will demonstrate that the undervote effect was larger in precincts with the more senior voters (i.e. voters over 75 years old).

Taken together, the evidence implies that ballot format is the cause of the 13th Congressional District undervote in Sarasota County. There is no logical reason why the incidence of undervoting would appear to a greater degree in precincts with elderly voters if the undervote problem was caused by a firmware malfunction that had infected every voting machine. If the machines had been affected by malevolent software, then the Sarasota undervote would not be expected to vary systematically in the ways described above.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been sent by facsimile or electronic transmission and U. S. Mail on this 18th day of December, 2006, to all counsel of record on the attached mailing list.

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IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

Draft: 12/18/2006 12:48 PM

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

CASE NO. 2006-CA-2973

Consolidated with Case No. 2006-CA-2996

vs.

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher and State Senator Daniel Webster,
et al.,

Defendants.

APPENDIX TO
DEFENDANT ELECTION SYSTEMS & SOFTWARE, INC.'s PRE-HEARING
MEMORANDUM OF LAW IN OPPOSITION TO PLAINTIFFS' MOTIONS TO
COMPEL PRODUCTION AND FOR ENTRY OF A PROTECTIVE ORDER

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COUNSEL FOR DEFENDANT
ELECTION SYSTEMS & SOFTWARE, INC.

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1. Page No. 42 from the November 21, 2006, Hearing Transcript.
2. November 30, 2006, Public Statement Issued by Secretary of State Sue Cobb.
3. The certificates issued by the Florida Department of State for Unity 2.4.4.
4. The certificates issued by the Florida Department of State for Unity 2.4.4.2.
5. Advertisement by the Sarasota County Supervisor of Elections regarding the logic and accuracy testing of the County's voting and tabulation equipment to be used in the November 7, 2006, election that was scheduled for testing on October 20, 2006.
6. Certified results of the logic and accuracy testing issued by the Canvassing Board.

IN THE CIRCUIT COURT OF THE
SECOND JUDICIAL CIRCUIT IN
AND FOR LEON COUNTY, FLORIDA.

CHRISTINE JENNINGS, nominee of
the Democratic Party for Representative
in Congress from the State of Florida's
Thirteenth Congressional District,

CASE NO. 2006 CA 2973

Plaintiff,

vs.

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher, and State Senator Daniel
Webster, et al.,

Defendants.

/

IN RE:	HEARING
BEFORE:	HONORABLE WILLIAM L. GARY (Circuit Court Judge)
DATE:	Tuesday, November 21, 2006
TIME:	Commenced: 10:30 a.m. Concluded: 11:15 a.m.
LOCATION:	Courtroom 2F Leon County Courthouse Tallahassee, Florida
REPORTED BY:	LIZ CLEARY, RPR Notary Public in and for State of Florida at Large

ASSOCIATED COURT REPORTERS

Post Office Box 306 * Tallahassee, Florida 32302
Phone (850) 222-5508 * Fax (850) 222-2428

Appendix 1

1 of the Supervisor of Elections. As far as any tests they
2 are going to conduct Tuesday, that is great, but I do want
3 the Supervisor to make available an opportunity for the
4 experts of either candidate, the Plaintiff or Mr. Buchanan,
5 to be there, observe. And I'm sure we will be addressing it
6 again, because whatever they do is going to be unacceptable
7 to somebody. But it may answer the question, too. I'm sure
8 hoping it will.

9 Your request for everything to take place by tomorrow
10 is totally out of order. I'm denying your motion to
11 expedite it, however I'm going to require the Defendants to
12 respond to discovery within 15 days.

13 As far as the source code, I'm denying your motion
14 without prejudice. I think ES&S needs an opportunity to be
15 heard. If they are heard, you may get that source code.
16 There is generally ways to get around the public becoming
17 aware what is in the source code. I'm aware of that, and
18 you all know it, too.

19 I think you ought to see if you can work something out
20 on the discovery, but I have a feeling within 15 days we're
21 going to have another hearing, just a wild guess. You do
22 respond to the complaint within ten days. I believe that is
23 the statute. And I believe 106 also rests venue here in
24 Leon County.

25 What have I missed?

1143



FLORIDA DEPARTMENT OF STATE

Sue M. Cobb
Secretary of State

For Immediate Release

Contact: Jenny

Nash

November 30, 2006

850.245.6518

jnash@dos.state.fl.us

STATE COMPLETES FIRST TESTING PHASE IN SARASOTA AUDIT

~Voting Machines Accurately Record Votes~

Tallahassee, FL – Secretary of State Sue M. Cobb today announced the first parallel test of the state audit of Sarasota County's voting systems has been successfully completed.

No anomalies were discovered in the machines; they functioned exactly as designed. The audit team, working in conjunction with experts from both campaigns, resolved the handful of variations in Tuesday's parallel test results by first verifying the script then reviewing the video tape of the parallel test. All variations were a result of human error.

"The state is committed to ensuring the integrity of elections in Florida. To that end our comprehensive audit will proceed according to the audit plan," said Secretary Cobb.

The audit continues with the team collating and reviewing election records from the November 7th General Election. A second parallel test will occur on Friday, December 1st. This test will be conducted on machines used in the November election.

The public and representatives of the candidates are invited to observe the second parallel test. The testing will take place from 6:30 a.m. to 7:30 p.m. at:

The Interim Government Operations Center
1001 Sarasota Center Boulevard
Sarasota, FL 34240

###

Appendix 2

12/4/2006

A-514

Certification
Election Systems and Software, Inc.
The ES&S Voting System, Release 4.5, Version 1

On this date, the Department of State certifies *"The ES&S Voting System, Release 4.5, Version 1"*, submitted by Election Systems and Software, Inc., for purchase or use by County and Municipal Governments of the State of Florida.

This version of the system consists of:

Election Administration:

- Unity Version 2.4.4
 - Election Data Manager (EDM), version 7.2.1.0
 - Ballot Image Manager (Optech), version 3.2.0.0
 - Hardware Programming Manager (HPM), version 5.0.3.1
 - Memory Pack Receiver/Programmer, Revisions C or D w/ firmware version 2.06 or 2.08
 - iVotronic Supervisor Terminal (12" or 15")
 - PEB Data Acquisition Device, Model 1
 - Election Reporting Manager (ERM), version 7.0.0.1
 - Audit Manager, version 7.0.2.0
 - *Optional software*
 - Data Acquisition Manager (DAM), version 6.0.0.0 (for modem communications)
 - iVotronic Image Manager, version 1.2.3.0 (for bitmap system)
- COTS software
 - *Optional Oracle 9i, version 9.2.0.1.0 (for use with iVotronic Image Manager)*
 - Adobe Acrobat Reader, version 7.0 standard or later
 - Adobe Type Basics 6.5 or similar font manager
 - RM Cobol, version 7.50 or later
 - Cobol Wow, version 3.12 or later.

Precinct Count (one or more of the following):

- iVotronic DRE (12" & 15" w/ or w/o ADA), hardware version 1.0 w/ firmware version 8.0.1.2
- *Auxiliary equipment for iVotronic DRE:*
 - PEB Revs: iV1.7b1-PEB-S, iV1.7b1-PEB-V, iV1.7b2-PEB-S, iV1.7b2-PEB-V, iV1.7c-PEB-S, iV1.7c-PEB-V
 - COTS headphones for audio ballots (for use with ADA iVotronic)
 - Communications Pack
 - *Optional iVotronic Supervisor Terminal (12" or 15") (for voter activated method)*
- Optech III-P Eagle, hardware versions B.01-B.06, C-01a-C-01c, C.02a-C.02c, C.03a-C.03c, C.04, C.05, C.06 & C.07
 - HPS Firmware version 1.30
 - Memory Pack, revision C, D, or F w/ APS firmware version 1.52
- *Optional auxiliary equipment for Optech III-P Eagle:*
 - Eagle Modem, Release 1
 - CPS firmware version 1.08a

Central / Absentee Count (one or more of the following):

- Optech III-P Eagle (as defined for precinct count)
- Optech IV-C, Model 400, hardware version 2.00 or 2.02 w/ software version 1.05C
 - Recount Utility, software version 1.05rc

This certification is granted pursuant to Section 101.015, Florida Statutes, and Rule Chapter 1S-5, Florida Administrative Code.



Certification # 0505ES&S-01 (Revised)
 Given under my hand, and the Great Seal of the State of
 Florida at Tallahassee, the Capitol, this Tenth day of
 November, A.D. 2005.

Karen Roberts

Dawn K. Roberts, Director
 Division of Elections
 Department of State

Appendix 3

1145



FLORIDA DEPARTMENT OF STATE
Sue M. Cobb
Secretary of State

July 17, 2006

Rich Bernstein, State Certification Manager
Election Systems & Software
11208 John Galt Boulevard
Omaha, Nebraska 68137-2364

Regarding certification control number: 0508ES&S-02 (Revision2)

Dear Mr. Bernstein:

Enclosed is the document of certification for the ES&S Voting System "Release 4.5, Version 2." This is a revised certification to add the optional equipment, iVotronic Battery Charger and Compact Flash Multi-Card Reader / Writer as tested by the Division during June 2006. This revision also removes the option for voter activation (i.e. the supervisor terminal at the precinct and the following PEB versions: iV1.7b1-PEB-V, iV1.7b2-PEB-V, iV1.7c-PEB-V).

This revised certificate reflects the version as tested by the Florida Division of Elections. Please note that under this certification all counties and municipalities in Florida may purchase or use this configuration of the system.

This certification applies only to the voting system described on the face of the certificate. Any changes to the configuration of this system, or any component of the system, must be reviewed by the Division prior to purchase or use in Florida to determine if re-certification is required.

A copy of the certificate will be mailed to each supervisor of elections in Florida.

If we can be of further assistance, please do not hesitate to call.

Sincerely,

A handwritten signature in cursive script that reads "Dawn K. Roberts".

Dawn K. Roberts, Esq.
Director
Division of Elections

DKR/dcs
Enclosure (1)

Division of Elections
R.A. Gray Building, Room 316 • 500 South Bronough Street • Tallahassee, Florida 32399-0250 •
(850) 245-6200 • FAX (850) 245-6217

Appendix 4

A-516

Certification
Election Systems and Software, Inc.
The ES&S Voting System, Release 4.5, Version 2

On this date, the Department of State certifies *The ES&S Voting System, Release 4.5, Version 2*, submitted by Election Systems and Software, Inc., for purchase or use by County and Municipal Governments of the State of Florida.

This version of the system consists of:

Election Administration:

- Unity Version 2.4.4.2
 - Audit Manager, version 7.0.2.0
 - Election Data Manager (EDM), version 7.2.1.0
 - ES&S Ballot Image Manager (ESSIM), version 7.2.0.0
 - Hardware Programming Manager (HPM), version 5.0.3.1
 - COTS OmniDrive or similar PCMCIA interface (for use with Model 100)
 - Needham's Electronics EMP-11 Device Programmer w/ES&S 2102 piggyback card (for use with Model 150)
 - COTS Zip drive (for use with Model 650)
 - San Disk Image Mate or similar compact flash interface (for use with iVotronic compact flash cards)
 - Election Reporting Manager (ERM), version 7.0.0.3
 - Optional software
 - Data Acquisition Manager (DAM), version 6.0.0.0 (for modem communications)
 - iVotronic Image Manager (IVIM), version 1.2.3.0 (for bitmap system)
 - Optional hardware
 - One or more Equinox multi-modem adapters, 4 or 8 ports (for use with Data Acquisition Manager)
 - One or more Sealevel Systems COMM+8.PCI serial adapters (for use with Data Acquisition Manager and a jurisdiction's existing modem bank)
- COTS software
 - Optional Oracle 9i, version 9.2.0.1.0 (for use with iVotronic Image Manager)
 - Adobe Acrobat Reader, version 7.0 Standard or later
 - Adobe Type Basics 65 or similar font manager (for Helvetica fonts)
 - RM Cobol, version 7.50 or later
 - Cobol Wow, version 3.12 or later
 - Norton Anti Virus 2004 or equivalence

Precinct Count (one or more of the following):

- Model 100 Precinct Ballot Counter, hardware version 1.3,
 - w/firmware version 5.0.0.0
 - Auxiliary equipment for Model 100:
 - Optional internal modem
 - Metal Ballot Box
- iVotronic DRE (12" & 15" w/ and w/o ADA), hardware version 1.0
 - w/ firmware version 8.0.1.2
 - Auxiliary equipment for iVotronic DRE:
 - FEB Rev.: iV1.7b1-FEB-S iV1.7b1-FEB-V iV1.7b2-FEB-S
iV1.7b2-FEB-V iV1.7c-FEB-S iV1.7c-FEB-V
 - COTS headphones for audio ballots (for ADA iVotronics)
 - Communications Pack
 - Optional iVotronic Supervisor Terminal (12" or 15") (for voter activated method)

Central / Absentee Count (one or more of the following):

- Model 150 Central Ballot Scanner, hardware version 1.1
 - w/ firmware version 2.1.2.0
 - Two COTS parallel printers
- Model 650 Central Count Ballot Tabulator, hardware version 1.0 or 1.1
 - w/ firmware version 2.1.0.0
 - Two COTS parallel printers

This certification is granted pursuant to Section 101.015, Florida Statutes, and Rule Chapter 1S-5, Florida Administrative Code.



Certification # 0508ES&S-02 (Revised)
 Given under my hand, and the Great Seal of the State of
 Florida at Tallahassee, the Capitol, this Tenth day of
 November, A.D. 2005.

Dawn K. Roberts

Dawn K. Roberts, Director
 Division of Elections
 Department of State
 State of Florida

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FLORIDA DEPARTMENT OF STATE
Sue M. Cobb
Secretary of State

September 8, 2006

Rich Bernstein, State Certification Manager
Election Systems & Software
11208 John Galt Boulevard
Omaha, Nebraska 68137-2364

Regarding certification control number: 0505ES&S-01 (Revision3)

Dear Mr. Bernstein:

Enclosed is the document of certification for the ES&S Voting System "Release 4.5, Version 1." This is a revised certification reflecting the addition of Election Reporting Manager (ERM) version 7.0.0.1 with service release 1 which includes an enhancement to the Undervote Report Utility.

This revised certificate reflects the version as tested by the Florida Division of Elections. Please note that under this certification all counties and municipalities in Florida may purchase or use this configuration of the system.

This certification applies only to the voting system described on the face of the certificate. Any changes to the configuration of this system, or any component of the system, must be reviewed by the Division prior to purchase or use in Florida to determine if re-certification is required.

A copy of the certificate will be mailed to each supervisor of elections in Florida.

If we can be of further assistance, please do not hesitate to call.

Sincerely,

A handwritten signature in cursive script that reads "Dawn K. Roberts".

Dawn K. Roberts, Esq.
Director
Division of Elections

DKR/dcs
Enclosure (1)

Division of Elections
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A-518

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FLORIDA DEPARTMENT OF STATE

Sue M. Cobb
Secretary of State

September 11, 2006

Mr. Richard Bernstein
Election Systems and Software, Inc.
11208 John Galt Blvd.
Omaha, NE 68137

Ref: ES&S Voting Systems, Release 4.5, Version 1
ES&S Voting Systems, Release 4.5, Version 2

Re: Service Release 1 for ERM version 7.0.0.1 and 7.0.03

Dear Mr. Bernstein:

Per the Florida Voting Systems Standards (FVSS), this letter serves to document the Test Status Report and the Qualification Test Report for ERM Service Release 1 (SR1).

Test Status Report:

Based on the following:

- Acceptable review of the Service Release 1 source code for the Election Reporting Manager (ERM) undervote utility (UNDRVOTE.EXE) performed by the Florida Division of Elections
- Acceptable results from the Florida qualification tests performed at Pasco and Escambia Counties
- Complete and acceptable application for Florida certification

It is the determination of the Bureau of Voting Systems Certification that the results of the qualification tests provide objective evidence that the referenced voting systems are in compliance with the FVSS and applicable Florida Statutes.



Public invited to attend logic and accuracy testing

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(SARASOTA, FL, October 17, 2006) - Supervisor of Elections Kathy Dent invite public to attend logic and accuracy testing of the county's voting and tabulating to be used in the November 7, 2006, General, Special, City of North Port, and C Venice General elections.

The testing is scheduled for Friday October 20, 2006, at 9 a.m. at the office of the Supervisor of Elections in the Terrace Building at 2001 Adams Lane, Sarasota,

Logic and accuracy testing is performed prior to every election on a random sample of all the voting machines that will be fielded on election day to ensure that they are operating and recording accurately. Testing of the tabulating equipment and election reporting software is also conducted prior to every election.

Appendix 5



PUBLIC MEETING NOTICE PUBLIC LOGIC AND ACCUR TESTING OF VOTING AND TABULATING EQUIPME

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Submit a Question

The Sarasota County Canvassing Board will convene at the office of the Supervisor Elections, 2001 Adams Lane, Sarasota, Florida, at 9:00 a.m. on Wednesday, November 8, 2006. The Board is convening for the logic and accuracy testing of the absentee ballot tabulating equipment, that will be used in the November 7, 2006, General, Special and Municipal elections.

Florida law requires each supervisor of elections to test the county's voting and tabulating machines prior to each election to ensure that the equipment will correctly count all votes. Voters are encouraged to attend and observe these logic and accuracy tests.

In accordance with the Sunshine Law of Florida, the meeting will be open to the public.

NOTE: §286.0105, Florida Statutes, states that if a person decides to appeal any decision of a board, agency, or commission with respect to any matter considered at a meeting, he or she will need a record of the proceedings, and that, for such purpose, the board or agency may need to ensure that a verbatim record of the proceedings is made, which record shall include the testimony and evidence upon which the appeal is to be based.

CERTIFICATE OF TESTING

The undersigned, comprising the Sarasota Canvassing Board for the November 7, 2006, General and Special elections, do hereby certify that:

A Logic and Accuracy test was held in the office of the Supervisor of Elections at 101 South Washington Boulevard, Sarasota on October 20, 2006, for testing voting equipment and tabulation equipment for said election.

The Canvassing Board observed the Logic and Accuracy test and compared the results with manually calculated/known totals for each issue. The Board verified the correctness of all totals, including the number and type of ballots cast, number of votes cast for each issue, and the number of undervotes and overvotes.

The Supervisor of Elections has custody of all test materials and has taken steps to ensure the security of said materials in accordance with Florida Statutes.

KATHY Dent
Name

Name

Name

Kathy Dent SOE
Signature
for the Board

Signature

Signature

Dated this 20th day of October, 2006.

Appendix 6

CERTIFICATE OF TESTING

The undersigned, comprising the Sarasota Canvassing Board for the November 7, 2006, General, Special and Municipal elections, do hereby certify that:

A Logic and Accuracy test was held in the office of the Supervisor of Elections at 101 South Washington Boulevard, Sarasota on November 1, 2006, for testing voting equipment and tabulation equipment for said election.

The Canvassing Board observed the Logic and Accuracy test and compared the results with manually calculated/known totals for each issue. The Board verified the correctness of all totals, including the number and type of ballots cast, number of votes cast for each issue, and the number of undervotes and overvotes.

The Supervisor of Elections has custody of all test materials and has taken steps to ensure the security of said materials in accordance with Florida Statutes.

Kathy Dent
Name

Kathy Dent - SOE
Signature For the Board

Name

Signature

Name

Signature

Dated this 1st day of November, 2006.

Tab 26

1 of 67 sheets Page 1 to 4 of 169 12/28/2006 11:36:41 A

<p>5</p> <p>1 THE COURT: Be seated, please. Good 2 afternoon.</p> <p>3 MR. BURHANS: Good afternoon, Your Honor. Glenn Burhans. We have a brief housekeeping issue relating to today's hearing that I would like to 6 address.</p> <p>7 THE COURT: Excuse me now?</p> <p>8 MR. BURHANS: We have a brief housekeeping I 9 would like to address with you. Adam Landa, a law partner of mine, admitted to practice in New York 11 and a member of good standing in that bar is also a 12 computer programmer. Mr. Landa has been assisting 13 in advising us on technical matters in this lawsuit.</p> <p>14 And we have a unique situation, because 15 Mr. Landa is also a resident of Florida. He's 16 recently moved here. He is in the process of 17 applying for admission to the Florida Bar, and he 18 will have the pleasure of sitting for the bar exam 20 in February.</p> <p>21 That being the case, he cannot apply for 22 admission pro hac vice in this matter. However, we 23 would like to avail ourselves of his assistance in 24 the examination of the technical issues, and to the 25 extent necessary, providing legal argument on</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>7</p> <p>1 invoke the rule in this case. And we've agreed not 2 to.</p> <p>3 MR. DeGRANDY: Correct.</p> <p>4 MR. HERRON: That the experts can remain in 5 the hearing and listen to the other experts 6 testify. We've also, among ourselves, agreed that 7 each party could make -- would make an opening 8 statement to the court, if that's all right with 9 the court.</p> <p>10 THE COURT: That's fine.</p> <p>11 MR. HERRON: They would not exceed 15 minutes.</p> <p>12 THE COURT: All right.</p> <p>13 MR. HERRON: I'm going to make the opening 14 statement on behalf of the Jennings plaintiff.</p> <p>15 THE COURT: All right.</p> <p>16 MR. HERRON: We're here today, Your Honor, on 17 a motion by Christine Jennings to compel production 18 of source code from ES&S relating to IVotronic 19 Voting Systems, its Unity Software Suite and its 20 personal electronic ballots or PEBs, which were 21 used in the November 2006 general election in 22 Sarasota County.</p> <p>23 The issues addressed in this hearing will 24 likewise be applicable to our motion to compel the 25 production of the voting machines themselves that</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>6</p> <p>1 technical issues to the court, if that is 2 necessary.</p> <p>3 I've conferred with counsel in this matter, 4 and there is no opposition to our request. So we 5 ask that you allow Mr. Landa to participate in the 6 proceedings in this case, in the technical advisory 7 capacity that I've outlined with respect to 8 examining technical witnesses and, if necessary, 9 making technical argument.</p> <p>10 THE COURT: Objection, counsel?</p> <p>11 (All respond "no objection.")</p> <p>12 THE COURT: Fine.</p> <p>13 MR. BURHANS: Thank you, Your Honor.</p> <p>14 THE COURT: As I understand it, we're here 15 this afternoon, anyway, to consider the motions to 16 compel, motions for protective order and -- which 17 are all basically the same thing. And we're here 18 on the limited issue of reasonable necessity for 19 ES&S to produce trade secret materials. Is that 20 your understanding?</p> <p>21 (All respond affirmatively).</p> <p>22 THE COURT: Ready to proceed?</p> <p>23 MR. HERRON: Yes, Your Honor, we are. Again, 24 one or two housekeeping issues before we proceed, 25 Your Honor. Counsel has discussed whether to</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>8</p> <p>1 were used in Sarasota County. Source code is 2 programming statements and instructions written by 3 a programmer, which, when converted into machine 4 readable language, tells the computer what to do in 5 a certain situation or in a myriad of situations.</p> <p>6 The state defendants have refused to provide 7 this information in response to our request to 8 produce, asserting that it is a trade secret which 9 belongs to ES&S. ES&S has been made a party to 10 these proceedings so that it may assert its 11 interests with respect to the source code, which it 12 has done.</p> <p>13 ES&S has asserted that the source code and its 14 machines and basically everything associated with 15 its voting system, is a trade secret. In fact, all 16 parties to this proceeding have conceded for the 17 purposes of these motions that this information is 18 a trade secret.</p> <p>19 The trade secret privilege is not absolute. 20 In each case the court must weigh the importance of 21 protecting the trade secret against the interests 22 in facilitating the trial and promoting the just 23 end to the litigation. The issue before the court 24 today is whether the plaintiffs can establish 25 reasonable necessity to compel production of the</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: center;">9</p> <p>1 source code; and if so, what protective measures 2 will adequately protect the interests of ES&S. 3 In making this determination, we suggest that the court consider the following factors: The necessity of the disclosure to the presentation of 6 the plaintiff's case and the potential impact of 7 the disclosure on ES&S's business. 8 Defendant ES&S, in its memorandum that it 9 submitted to the court, agrees that these are the 10 factors to be considered in this case. 11 With respect to the necessity of disclosure, 12 the source code is relevant to the issues in this 13 proceeding. Christine Jennings has alleged in her 14 amended complaint that the ES&S touch screen voting 15 system that was used at the general election in 16 November 2006 in Sarasota County recorded 18,380 17 undervotes in the District 13 race for Congress. 18 In percentage terms, this translates into an 19 undervote rate of 14.9 percent, which means that 20 the electronic voting system failed to record the 21 votes of approximately one out of every seven 22 voters in Sarasota County with respect to this 23 race. The amended complaint further alleges that 24 these undervotes were caused by the failure of the 25 electronic voting system to record all the legal ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">11</p> <p>1 it's the voters of Congressional District 13. It 2 was their votes that were not counted. 3 While disclosure of this information impacts 4 the business interests of ES&S, such impact pales 5 in significance to the interests of the voters of 6 District 13 that their votes be counted accurately 7 and recorded accurately. 8 Plaintiffs do not seek to disclose ES&S's 9 source code to the world or to the competitors of 10 ES&S. Rather, they seek to determine whether there 11 was a defect or flaw in the source code, which led 12 to the disenfranchisement of thousands of voters in 13 Sarasota County by recording an undervote, when in 14 fact these voters voted for one of the candidates. 15 It is that simple. 16 Defendant ES&S argued that disclosure of the 17 trade secret to plaintiff or to plaintiffs could 18 result in harm to their reputation. But the 19 purpose of the trade secret's privilege is not to 20 protect a company's reputation, it is to protect 21 the secrets themselves. 22 The reputation of ES&S will rise or fall based 23 on examination of what actually happened in this 24 election and not on the disclosure of the secret in 25 the manner proposed by the plaintiffs. Plaintiffs ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: center;">10</p> <p>1 votes that were cast in the race. 2 An examination of the source code for the ES&S 3 iVotronic Voting System, as will be explained by 4 Charles Stewart and Dan Wallach in our evidentiary 5 presentations to the court, is necessary to 6 determine and prove, in this contest proceeding, 7 that the electronic voting system failed to record 8 the votes of a number of voters sufficient to place 9 in doubt or to change the results of the election. 10 We recognize that the other parties may have 11 different theories or explanations for the results 12 of the election. They may -- they are entitled to 13 present their theories and explanations at trial. 14 They are not appropriate here on this motion to 15 compel. 16 With respect to the potential impact on ES&S, 17 plaintiffs do not seek this information for 18 commercial advantage. Plaintiffs do not seek this 19 information in order to recover monetary damages. 20 Rather, plaintiffs seek this information to assure 21 the results of an election of a member of the 2 Congress of the United States. 23 The ultimate party in interest in this 24 proceeding is not ES&S. It's not the candidates. 25 It's not the state or county defendants, but rather ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">12</p> <p>1 have submitted a draft protective order to this 2 court and to ES&S in an effort to assure the court 3 and ES&S that it intends to use the source code 4 only to determine and prove in this case that the 5 electronic voting system failed to record the votes 6 of a number of voters sufficient to place in doubt 7 or change the results of the election. This is the 8 test under the contest statute. 9 Plaintiff and her experts are more than 10 willing to abide by the terms of this protective 11 order or any appropriate order this court may 12 impose. It is defendant's burden to show that, 13 even with an appropriate protective order, they 14 would still suffer harm. This they cannot do. 15 As the evidence will show, plaintiffs have a 16 reasonable necessity for the production of source 17 code from ES&S relating to its iVotronic Voting 18 System, its Unity Software Suite, its iVotronic 19 voting machines, and its personal electronic 20 ballots, or PEBs, which were used in the November 21 2006 general election in Sarasota County. Thank 22 you, Your Honor. 23 MR. FINLEY: Lowell Finley for the voter 24 plaintiffs in the federal case that's consolidated 25 here, case number 2996. I will speak just briefly, ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>13</p> <p>1 not to repeat anything that Mr. Herron has stated. 2 Mr. Herron properly points out that it is the 3 voters who were harmed by the loss of 18,000 votes by an electronic voting system in this case. Indeed the Florida courts have recognized this in o the Boardman vs. Esteva decision, the court noted 7 that in an election contest, the real parties in 8 interest are the voters and said, quote, they are 9 possessed of the ultimate interests, and it is they 10 whom we must give primary consideration. 11 The defendants in this case have taken a 12 consistent line, and that is to hold the voting 13 machines blameless while blaming the voters. The 14 most recent outrageous and deplorable instance of 15 this comes in the form of the first set of 16 interrogatories that were served on the voter 17 plaintiffs last Friday by the state defendants; 18 that is, the secretary of state, Governor Bush and 19 the other members of the election canvassing 20 commission. 21 I would like to read to the court two of those 22 interrogatory questions. Number 15: Do you wear 23 glasses, contact lenses or hearing aids; if so, who 24 prescribed them? When were they prescribed? When 25 were your eyes or ears last examined, and what is ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>15</p> <p>1 for both the voter plaintiffs and for Ms. Jennings 2 is to establish the reasonable necessity of gaining 3 access to the source code and the other information 4 that ES&S has claimed is subject to trade secret 5 protection. 6 All necessary protection for that trade secret 7 status is provided in the protective order that has 8 been jointly proposed by the plaintiffs in the two 9 cases. And I believe that the evidence to be 10 presented in this hearing will establish beyond any 11 doubt the reasonable necessity of the plaintiffs 12 being allowed access to that information. Thank 13 you. 14 MR. DeGRANDY: Good afternoon, Your Honor. My 15 name is Miguel DeGrandy. I represent Election 16 Systems and Software. Your Honor, with all due 17 respect, much has been said by the plaintiffs about 18 who is represented in this matter and what this 19 case is all about, and therefore within the time 20 allotted for our opening statement, I wanted to 21 take a moment to put this case, and particularly 22 the proceedings today, in perspective. 23 Your Honor, we're not here to have a political 24 debate about paper trails, about verifiable voting 25 systems. The forums to make those arguments are ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>14</p> <p>1 the name and address of the examiner? 2 Number 15: Did you consume any alcoholic 3 beverages or take any drugs, prescribed or not, or 4 medications within 12 hours before the time you 5 voted in the November 2006 general election? If 6 so, state the type and amount of alcoholic 7 beverages, drugs, prescribed or not, or medication 8 which were consumed and when and where you consumed 9 them. 10 Your Honor, this is not a car accident case. 11 This is a case about 18,000 votes having been lost 12 by an electronic voting system. And for any 13 defendant to suggest that the explanation for that 14 gross failure of the system lies in the possible 15 compromised state of a handful of individual voters 16 I believe is truly offensive, but more importantly, 17 reflects an underlying attitude that pervades the 18 defendant's approach to the case. And I think 19 that's part of what's at issue here today. 20 The notion that plaintiff voters should be 21 subjected to this sort of intrusive discovery, 22 while the plaintiffs are denied access to obviously 23 relevant and necessary information in order to be 24 able to make out their case I think is a disparity 25 that speaks for itself. The burden of proof here ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>16</p> <p>1 across the street from Your Honor's courthouse. 2 This case is only about an election contest in the 3 13th congressional district. And the motions that 4 are the subject of this hearing present a narrow 5 issue as to whether a private party, under these 6 circumstances, should have a right to defeat the 7 statutory rights afforded to my client and the 8 interests of the people of the state of Florida in 9 maintaining exclusive access to certain sensitive 10 information within state agencies in order to 11 preserve the integrity and security of its election 12 systems. 13 Now let's take a moment to discuss the parties 14 in this matter before we proceed to frame the 15 issues, Your Honor. I represent an equipment and 16 technology provider that is not a proper party in 17 an election contest. My client has been brought 18 into this matter as a party to induce this court to 19 find that well settled evidentiary standards with 20 respect to production of trade secrets don't apply 21 in this case. 22 Now the plaintiffs have told you that in the 23 context of this lawsuit they represent, and I quote 24 from a previous proceeding, the voters of Sarasota 25 County, unquote. I dare say that they do not ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>17</p> <p>1 represent the tens of thousands of voters that cast 2 their votes and want their votes to be recorded, 3 because what they want is to have that election 4 overturned.</p> <p>Indeed they have inferred that they may</p> <p>6 represent the people of the state of Florida and 7 the nation in this matter. Now, respectfully, Your 8 Honor, the last time I checked, none of the learned 9 counsel on the plaintiff's side were elected by the 10 people for that purpose. And the last time I 11 checked, Your Honor, I saw no order executed by 12 this court certifying a class action in this 13 matter.</p> <p>14 To my knowledge, the only parties entrusted by 15 law and by the people to represent their interests 16 are the state defendants in this case.</p> <p>17 So let me take a moment to talk about who the 18 plaintiffs do represent, because it is relevant to 19 the balancing of interest that Your Honor must 20 ultimately undertake in deciding the issues 21 presented in today's motion. The Fedder plaintiffs 22 represent the Fedder plaintiffs. However, they are 23 represented in -- by and aligned with special 24 interest political organizations that have a 25 well-defined political agenda adverse to DRE</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>19</p> <p>1 are the result of a congressional election in which 2 there was a high undervote percentage in one 3 county, comprised -- and that is part of that 4 congressional district.</p> <p>5 To date the plaintiffs have produced no 6 evidence that they challenged the ballot layout 7 prior to the election. They have produced no 8 evidence that they challenged the results of the 9 logic and accuracy testing performed on this 10 equipment prior to the election. All this 11 information was published to all candidates, as 12 well as the general public.</p> <p>13 What the plaintiffs have presented are bare 14 bones allegations, unreliable anecdotal evidence 15 and two expert declarations. In regard to the 16 anecdotal statements, the evidence will show that 17 one of the plaintiff's own experts has stated that 18 this type of evidence is not reliable, because in 19 Professor Wallach's words, quote, participants may 20 lie to best support their candidates of preference, 21 unquote.</p> <p>22 Putting that aside, the evidence will show 23 that these types of declarations are also 24 inherently unreliable because there is a 25 significant likelihood that honest, well-meaning</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>18</p> <p>1 Electronic Voting Systems.</p> <p>2 Mr. Coffey and his colleagues represent a 3 client who lost in a close election. And as Your 4 Honor knows, this is not the first election contest 5 that has been tried in this courthouse, nor will it 6 be the last as long as human beings are in charge 7 of Florida's elections. If I may, Your Honor, I 8 would respectfully tell you that more than anyone 9 in this courtroom today, I know exactly how 10 Ms. Jennings feels, because I lost my first 11 election to the Florida House of Representatives by 12 one vote.</p> <p>13 Now unlike Ms. Jennings, I didn't sue anyone. 14 I ran again and won. But it took me years to come 15 to terms with the fact that what happened in that 16 election is that I simply lost a close election in 17 an open, democratic process. That is what has 18 happened here today.</p> <p>19 Let me try to take a few minutes to frame the 20 legal issues. We are here on a motion to compel 21 disclosure from the state of certain proprietary 22 technology that is held by them under a licensing 23 agreement. In the case of the source codes, it is 24 held in escrow, pursuant to a legislative mandate. 25 And the instant lawsuit and the motion to compel</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>20</p> <p>1 individuals, who believe they made a specific 2 choice, are prone to have made a mistake. Indeed 3 in the parallel test that will be presented as 4 evidence in this hearing, Your Honor will see that 5 even election department volunteers, who were given 6 a script of votes to cast and knew exactly the 7 purpose of the test, made mistakes.</p> <p>8 Turning to the experts' declarations, the 9 evidence will demonstrate that the opinions they 10 set forth are mere academic speculation. These 11 experts do not present a specific theory as to why 12 the equipment may have malfunctioned. They merely 13 speculate that the high undervote rate may indicate 14 that a malfunction might have occurred.</p> <p>15 Respectfully, well-settled Florida law 16 requires more than this showing in order to defeat 17 the rights of the holder of the trade secret, and 18 in this case, the interest of the state in 19 maintaining the security and integrity of its 20 election systems.</p> <p>21 In regards to the legal standards in this 22 case, plaintiffs have argued to this court that the 23 quantum of proof necessary to obtain the requested 24 discovery is extremely low. And they are wrong. 25 As discussed in our prehearing memorandum, Florida</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: center;">21</p> <p>1 courts have held that the party seeking production 2 of trade secrets must show a reasonable necessity 3 to obtain the information, and this must be proven 4 by a preponderance of the evidence. Florida courts 5 have clarified that, even if there were some 6 necessity to review trade secret information, the 7 parties seeking production must first show that the 8 necessity for this privileged information outweighs 9 the harm that disclosure will cause to the trade 10 secret owner. 11 Now the plaintiffs have argued to you that no 12 conceivable harm could result from disclosure of 13 this proprietary information to these plaintiffs, 14 because they are not competitors of ES&S. That 15 argument, Your Honor, is disingenuous at best. The 16 plaintiff's numerous public statements demonstrate 17 that they have a well-defined political agenda that 18 seeks to eliminate the use of DRE electronic voting 19 systems in the state of Florida and other 20 jurisdictions. 21 It is clear that disclosure to these 22 particular private parties has as much, if not more 23 potential for irreparable harm than disclosure to 24 an ES&S competitor. 25 Now the case law is also clear that, prior to ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">23</p> <p>1 2006. These are the same parallel tests that 2 plaintiffs have stated in their papers that were 3 needed to be conducted with our equipment and 4 software to determine whether they function 5 appropriately. 6 Pursuant to Your Honor's directive, both 7 candidates were allowed access and input in 8 conducting those tests. In fact, they were even 9 allowed to choose the machines that would be used 10 in the December 1st test. 11 And both of these tests demonstrated that the 12 machines were functioning exactly as designed, and 13 that there was no malfunction. In fact, let me 14 quote some of the findings detailed in the state's 15 report of the parallel test results, which was 16 released today. Quote: The parallel tests were 17 successful in demonstrating 100 percent accuracy in 18 recording the vote selections. 19 Another quote: There are no indications of 20 machine bias or otherwise voting machine faults 21 that would yield rejected legal votes. Final 22 quote: In summary, there is no evidence to support 23 the position that the iVotronic touch screens 24 caused those to be lost, unquote. 25 Finally, Your Honor, the state is now in the ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: center;">22</p> <p>1 making a decision on whether to allow review of 2 trade secret information, the court must conduct an 3 evidentiary hearing, which is what we're here for 4 today. Let's discuss what that evidence will show 5 in this case. 6 The evidence will show that on many occasions 7 Florida's election systems have been thoroughly 8 tested. For example, we will present evidence 9 regarding the process and requirements for 10 certification of voting equipment. In effect, the 11 equipment software and source code are thoroughly 12 reviewed in order to achieve federal and state 13 certification. 14 Before any election is conducted, certified 15 voting systems must also undergo additional 16 examinations, including logic and accuracy testing, 17 to verify that the machines and software are 18 working properly. These tests were performed prior 19 to the machines being utilized for this specific 20 election. 21 The tests were advertised, and the candidates 22 as well as the public were allowed to observe. In 23 the instant matter, because it was a close 24 election, additional postelection tests were 25 conducted on November 28th and December 1st of ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">24</p> <p>1 process of finalizing the protocols and procedures 2 to conduct their independent source code review by 3 well-qualified, independent experts. To the extent 4 that a source code review may be necessary in this 5 case, we respectfully submit that in balancing the 6 state's interests and my client's legitimate 7 statutory protected right in maintaining 8 confidential, the state's upcoming review should be 9 the only source code review allowed in this matter. 10 As we stated in our papers, Your Honor, to the 11 extent that Your Honor would like to see an 12 additional layer of redundant review and 13 independence in this upcoming source code review, 14 we would have no objection to this court appointing 15 an independent expert for such purpose that would 16 report directly to this court under the 17 requirements of a protective order. 18 Now the plaintiffs will probably tell you that 19 the federal and state certification standards are 20 woefully inadequate, that the independent testing 21 associations that are certified to conduct these 22 reviews for the government entities are 23 incompetent, that the elections officials that 24 supervise both the pre-election and postelection 25 testing simply don't know what they're doing, and ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>25</p> <p>1 that only a review by these plaintiffs and their 2 experts can be considered reliable. 3 In effect, to find reasonable necessity in this matter under their world view, one would have to conclude that all the independent tests run on our systems are meaningless and that only these 6 plaintiffs have found the only experts in the 7 nation that can examine computer systems and read a 8 source code. I submit to Your Honor that the 9 credible evidence will indicate otherwise. 10 Finally, Your Honor, the evidence will also 11 show that what occurred in District 13 is to a 12 great degree inconsistent with the theory of 13 computer malfunction and entirely consistent with 14 the fact that the ballot layout and design in this 15 race contributed to voter confusion. For example, 16 the evidence will show that the machines in both 17 Sarasota and Charlotte County, which is also part 18 of the congressional district, utilize the same 19 technology and source code, yet in Charlotte 20 County, where the ballot layout was different, the 21 undervote was within normal parameters. 22 The evidence will also show that in three 23 other counties, the same unusually high percentage 24 of undervote -- in fact higher -- was recorded in 25 ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>27</p> <p>1 MR. ANTONACCI: Likewise with the state 2 defendants. 3 MR. ELBRECHT: Also with the county canvassing 4 board. 5 MR. HIRSCH: Your Honor, Sam Hirsch for the 6 plaintiff Jennings. We would like to call as our 7 first witness Professor Charles Stewart. 8 Thereupon, 9 CHARLES STEWART, III 10 was called as a witness, having been first duly sworn, 11 was examined and testified as follows: 12 THE COURT: State your full name and spell 13 your last name, sir. 14 THE WITNESS: My name is Charles Stewart, 15 Stewart is spelled S-T-E-W-A-R-T. 16 DIRECT EXAMINATION 17 BY MR. HIRSCH: 18 Q Professor Stewart, what is your occupation? 19 A I am professor of political science at MIT, 20 and I am also the head of the political science 21 department at MIT. 22 Q And can you please briefly describe your 23 educational background. 24 A Yes. I graduated from William R. Boone High 25 School in Orlando, Florida in 1976, from which I went ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>26</p> <p>1 the attorney general's race. The evidence will 2 show that the attorney general's race in those 3 counties was set forth in a similar ballot layout 4 design as the congressional race in Sarasota 5 County. And the evidence will show that even in 6 precincts within Sarasota County, the undervote 7 varied in a way that shows correlation with some 8 demographics features, such as age. 9 This is also inconsistent with the theory that 10 a computer bug or malfunction caused the undervote, 11 unless, of course, computer bugs can tell the age 12 of the voter that is using the machine. 13 In summary, Your Honor, at the conclusion of 14 the evidentiary presentation, we respectfully 15 submit that the overwhelming evidence will show 16 that there is no computer malfunction that would 17 justify defeating my client's statutory interests 18 and the right of the people of the state of Florida 19 to maintain the integrity and security of its 20 election systems, and, therefore, the preponderance 21 of the evidence will show that there is no reasonable necessity to disclose requested information. Thank you, Your Honor. 24 MR. BURHANS: Your Honor, Vernon Buchanan has 25 no statement to make at this time. ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>28</p> <p>1 to Emory University. I graduated in 1979 there with a 2 degree in political science. 3 After that I spent a year at Yale Divinity 4 School and then went to Stanford University, where I 5 began graduate study at Stanford in political science. 6 I received a master's in political science from 7 Stanford in 1982. And I received my Ph.D. in 8 political science in 1985. 9 Q Professor, have you taught political science 10 at MIT ever since you got that Ph.D.? 11 A Yes, I have. 12 Q What fields do you teach and specialize in? 13 A In general I teach in American politics, and 14 in particularly congressional elections -- I'm sorry, 15 congressional politics, electoral politics, research 16 design, and also voting technologies. 17 Q And have you published in peer reviewed 18 journals in those areas of specialization? 19 A Yes, I have. 20 Q Professor, have you also been involved with 21 the Cal Tech-MIT Voting Technology Project? 22 A Yes, I have. 23 Q And can you please describe that work for us. 24 A Yes. The Voting Technology Project was 25 started by the presidents of these two universities ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: center;">29</p> <p>1 right after the infamous elections in 2000. The</p> <p>2 purpose of the project is to develop a</p> <p>3 multidisciplinary team of researchers who study issues</p> <p>4 of election technologies in particular and election</p> <p>5 policy in general. It's multidisciplinary, including</p> <p>6 social scientists, economists, business school</p> <p>7 professors, mechanical and electrical engineers.</p> <p>8 Q Have you been the MIT director of that</p> <p>9 project?</p> <p>10 A Yes. I was the MIT director of that project</p> <p>11 in 2002-2003.</p> <p>12 Q And in that capacity and as an academic</p> <p>13 generally, have you studied residual votes?</p> <p>14 A Yes. That's been my primary focus in this</p> <p>15 project and where I've done my publishing as well.</p> <p>16 Q Tell us what the term "residual votes" means.</p> <p>17 A Residual vote is the encompassing term for</p> <p>18 votes that are not counted legally in a race. They</p> <p>19 consist of two parts, something called an undervote</p> <p>20 and something called an overvote. An undervote is</p> <p>21 whenever a voter chooses not to or does not record a</p> <p>22 vote for the candidates in a particular race.</p> <p>23 It's simply a situation, if you have a</p> <p>24 two-candidate race, if the voter doesn't choose either</p> <p>25 candidate, that's an undervote. An overvote is a</p> <p style="text-align: center;">ACCURATE STENOTYPE REPORTERS, INC</p>	<p style="text-align: center;">31</p> <p>1 excessive. The likely distribution of the vote</p> <p>2 between candidates Jennings and Buchanan, had there</p> <p>3 not been an excess of an undervote, and finally to</p> <p>4 research into possible causes for the excess</p> <p>5 undervote.</p> <p>6 Q Professor, we will go through each of those</p> <p>7 three topics in some detail in a moment. If you could</p> <p>8 share with us first your very brief conclusions on</p> <p>9 each of the three.</p> <p>10 A On each of the three, for the first, which is</p> <p>11 the size of the undervote, I discovered that within</p> <p>12 the electronic systems, there is roughly a 12-percent</p> <p>13 excess in undervotes in the -- in the election,</p> <p>14 roughly 14,000 excess undervotes.</p> <p>15 I find, as to the second point, that, had</p> <p>16 there not been these undervotes, in all likelihood,</p> <p>17 Candidate Jennings would have won the race. And then</p> <p>18 finally I find that there is a likelihood that there</p> <p>19 were machine problems, malfunctions that may have</p> <p>20 contributed to this excess undervote, and theref re to</p> <p>21 affect the results of the race.</p> <p>22 Q In doing your research and analysis,</p> <p>23 Professor, what sort of data did you gather to answer</p> <p>24 these questions?</p> <p>25 A Originally after the election, I gathered</p> <p style="text-align: center;">ACCURATE STENOTYPE REPORTERS, INC.</p>
<p style="text-align: center;">30</p> <p>1 situation exactly the opposite, when the voter chooses</p> <p>2 an excess of candidates. In a simple case, where</p> <p>3 there are two candidates, that would be the voter</p> <p>4 voting for both candidates, which would also void the</p> <p>5 ballot.</p> <p>6 Q Have you published in peer reviewed journals</p> <p>7 about the issues of voting machines and residual</p> <p>8 votes?</p> <p>9 A Yes, I have.</p> <p>10 Q Are you aware of any American political</p> <p>11 scientist who has published more extensively about ...</p> <p>12 voting machines and residual votes than you have?</p> <p>13 A Not that I can think of, no.</p> <p>14 MR. HIRSCH: Your Honor, we tender Professor</p> <p>15 Stewart as an expert in voting technology, residual</p> <p>16 votes and statistical analysis of election data.</p> <p>17 MR. THOMAS: Harry Thomas on behalf of ES&S.</p> <p>18 We have no objection.</p> <p>19 THE COURT: So received.</p> <p>20 BY MR. HIRSCH:</p> <p>21 Q Professor, what areas have we asked you to</p> <p>22 research and analyze?</p> <p>23 A You've asked me to research and analyze the</p> <p>24 size of the undervote in Sarasota County, the</p> <p>25 likely -- the size of the undervote and whether it is</p> <p style="text-align: center;">ACCURATE STENOTYPE REPORTERS, INC</p>	<p style="text-align: center;">32</p> <p>1 general election returns from the county of -- from</p> <p>2 Sarasota County. These election returns are quite</p> <p>3 detailed. They first of all break down for every race</p> <p>4 in the county the returns by whether the vote was</p> <p>5 taken on election day, in the early voting period and</p> <p>6 in the absentee voting period for every -- for every</p> <p>7 race. They also record the same information by</p> <p>8 precinct.</p> <p>9 I also gathered similar information to the</p> <p>10 degree that it was available from other counties.</p> <p>11 More recently I've been able to acquire individual</p> <p>12 level data that's associated with the active voting</p> <p>13 itself. In particular, I've been able to gain access</p> <p>14 to and analyze two sets of files, one file, which is</p> <p>15 called ballot image files, which reflect the actual</p> <p>16 ballots that were cast on these electronic machines,</p> <p>17 the actual choices of voters.</p> <p>18 And secondly I've been able to examine</p> <p>19 so-called event logs, which record basically what</p> <p>20 happened in the sequence of time on each of the</p> <p>21 electronic voting machines that were used in Sarasota</p> <p>22 County.</p> <p>23 Q Professor, why were you interested in having</p> <p>24 data broken out as between absentee voting on the one</p> <p>25 hand and early voting and election day voting on the</p> <p style="text-align: center;">ACCURATE STENOTYPE REPORTERS, INC.</p>

<p>1 other hand?</p> <p>2 A The reason for that is that in Sarasota County, the absentee voting is done on paper, optically-scanned paper ballots. Both early voting and election day voting are done on the iVotronic electronic voting machines. And I wanted to get a comparison between the electronic machines and the paper.</p> <p>3 Q You also mentioned that you had individual level data. Did that allow you to determine how any specific person voted for any office?</p> <p>4 A No. The only -- the ballot images themselves are presented in random order. So there is no way I or anybody else could ascertain the individuals doing the voting.</p> <p>5 Q Turning to the first of the three areas you were asked to look at, the size of the undervote --</p> <p>6 MR. HIRSCH: Your Honor, we have previously given opposing counsel a set of exhibits that go with Professor Stewart's testimony. If I may approach and give that to you and the court reporter. Your Honor, we also have some blowups that I will put on the easels.</p> <p>7 BY MR. HIRSCH:</p> <p>8 Q Professor, I ask you first to turn to Exhibit ACCURATE STENO TYPE REPORTERS, INC</p>	<p>1 A Yes, it was.</p> <p>2 Q I'm going to pull this a little bit closer in, try to. Professor, can you explain what Exhibit 1B shows.</p> <p>3 A Yes. Exhibit 1B is a continuation of 1A. It likewise shows the counties, this time highlighting or reporting the undervotes within each county. We can see here that there is 21,230 -- I'm sorry, 21,368 total undervotes in the district, 18,000 of those being in Sarasota County.</p> <p>4 So that's roughly 86 percent, I believe, of all the undervotes in that one county.</p> <p>5 The final column shows the undervote rate, which divides undervotes by total votes cast in the county. And, again, we can see that Sarasota County, the rate was 12.9 percent overall. The rate in the other counties was significantly lower, and it was approximately 2.5 percent overall.</p> <p>6 Q Professor, I just put up the last part of Exhibit 1, 1C, and can you please describe what this shows?</p> <p>7 A This recaps the prior tables and draws our attention to Sarasota County compared to the other four counties that were in the district, the Buchanan and Jennings votes, where Buchanan prevails by a bit</p> <p>ACCURATE STENO TYPE REPORTERS, INC.</p>
<p>1 1A, which I will put up in a moment here.</p> <p>2 Professor, I've given you a laser pointer so you can actually highlight specific items. I know it's a long range, but if you can. Can you please explain what Exhibit 1A shows.</p> <p>3 A Exhibit 1A summarizes the official election returns from the 13th Congressional District. So what we have over here are each of the five counties; Charlotte, DeSoto, Hardee, Manatee, Sarasota. We have the votes cast for Buchanan and Jennings.</p> <p>4 So we show the number for Buchanan, Jennings, and down at the bottom we show the total, Buchanan, by the official returns, defeating Jennings by 369 votes.</p> <p>5 Q Roughly what fraction of the vote comes from Sarasota County?</p> <p>6 A Just a bit over half of the vote comes from Sarasota County. It's -- I'm sorry.</p> <p>7 Q And who won Sarasota County?</p> <p>8 A Sarasota County was won by Jennings.</p> <p>9 Q And who won the other counties?</p> <p>10 A Buchanan prevailed by narrow margin in the other counties.</p> <p>11 Q This table, like the rest of Exhibit 1, is based on the rest of the data you described earlier and prepared by yourself?</p> <p>ACCURATE STENO TYPE REPORTERS, INC</p>	<p>1 in the other four counties, Jennings prevails in Sarasota County. And we have the really large number of undervotes that are contained in Sarasota County, compared to the other four counties.</p> <p>2 MR. HIRSCH: Your Honor, we have about eight exhibits in total today, rather than moving them individually, if we could do so at the end.</p> <p>3 THE COURT: Fine.</p> <p>4 MR. HIRSCH: Thank you.</p> <p>5 BY MR. HIRSCH:</p> <p>6 Q Did the county-by-county figures you just discussed lead you to zoom in and focus on the Sarasota County data?</p> <p>7 A Oh, absolutely, yes.</p> <p>8 Q I've just put up Exhibit 2, Professor. Is this also something you prepared yourself based on the data you gathered?</p> <p>9 A Yes, I did.</p> <p>10 Q Does it focus in on Sarasota County exclusively?</p> <p>11 A Yes. It focuses on Sarasota County.</p> <p>12 Q Can you explain to us what it shows.</p> <p>13 A Yes. So what this shows is a plot where we compare the undervote rates in Sarasota County for all of the races that were on the county-wide ballot in</p> <p>ACCURATE STENO TYPE REPORTERS, INC.</p>

<p style="text-align: center;">37</p> <p>1 Sarasota County. So these are, for instance, the 2 statewide contests, the congressional contest, a few 3 county-wide offices, the statewide constitutional 4 amendments, et cetera. The bottom, along the bottom, 5 the X axis, we have the undervote rate for the 6 absentee ballots. Along the left on the vertical axis 7 we have the undervote rate for the early vote portion 8 of the election in Sarasota County. 9 Each of the dots on the graph reflects the 10 undervote rates in these two modes of voting among all 11 of these offices that are on the county-wide ballot. 12 There is two things that I would point out. First of 13 all, that is a general matter. There is a very strong 14 set of relationships -- regularities between the 15 undervote rates in these two modes of voting. And as 16 you can see, most of the points basically line up 17 along the line. 18 And I've drawn a line that describes very well 19 on that set of points. The other thing I would note, 20 just -- as well is that the 13th congressional 21 district is in red, and it's quite far away from the 22 line and from the other points. 23 Q And the reason you're comparing the absentee 24 ballots to the early voting ballots here is what, sir? 25 A The reason is that the absentee ballots were</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">39</p> <p>1 Q Did you draw these two diagonal lines by 2 laying a ruler down, or is it based on statistical 3 methodology? 4 A It was based on statistical methodology, 5 ordinary squares regression. 6 Q Did you calculate the odds, the chances that 7 this relationship between undervote in the paper 8 absentee ballots and undervote in the early voting or 9 election date electronic ballots was purely random? 10 A Yes. I calculated that. And the chance that 11 this relationship occurs purely randomly is less than 12 1 in 100 million. 13 Q Professor, can you explain the terms "normal 14 undervote" and "excess undervote" with regard to these 15 two exhibits. 16 A Sure. Normal undervote we can think of as the 17 undervote that would happen in a race if nothing 18 peculiar came up. In any race there will be people 19 who do not vote for a variety of reasons. So we will 20 call that amount normal. 21 Then the excess undervote in a race will be 22 the amount that's above and beyond what we would 23 consider normal. So if we were to take, say, the 24 election day graph here, the one on the right, the way 25 that we would calculate the normal undervote for</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: center;">38</p> <p>1 cast on paper, and there is no -- there have been no 2 questions raised about problems associated with the 3 paper ballots. So it's a natural comparison with the 4 early -- with the other two forms of voting, which 5 happened on electronic forms. 6 Q Professor, I've just put up Exhibit 3, 7 similar-looking graph. Can you please, first of all, 8 confirm that is something you prepared based on the 9 data you gathered? 10 A Yes, it is. 11 Q Can you explain what it shows? 12 A Yes. It's very much in keeping -- the idea is 13 very much like the previous graph. In this case what 14 I'm doing is showing the relationship between the 15 election day undervote rate and absentee voting. So 16 as before, the absentee voting is still along the 17 lower -- the lower axis. 18 Now the vertical axis along the left is the 19 undervote rate from election day. And, again, the 20 same general patterns hold. The data pretty much line 21 up along the line, indicating that in general 22 absent -- undervote rates in one form of voting are 23 highly predictive of undervote rates in the other form 24 of voting, with the 13th district sticking out far 25 from the line and other points.</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">40</p> <p>1 election day would be to basically find the undervote 2 rate in the absentee race, go up to the line that 3 corresponds with that -- my hand is a little shaky, I 4 apologize. And once we get to the line, we head over 5 to the vertical axis on the left. And that amount 6 tells us what we would expect the normal undervote to 7 be in a race. 8 So that's the calculation of the normal 9 undervote. Then the calculation of the excess 10 undervote is really the difference between where we 11 were on the line and how far up we have to go finally 12 to get to the office that we are examining. In this 13 case we have to go roughly 12 percentage points from 14 the normal undervote here to the 13th congressional 15 district up there. 16 Q And, Professor, combining the two sets of 17 electronic votes, the early voting set and the 18 election day set, what roughly was the normal 19 undervote for this congressional race and the excess 20 undervote? 21 A It was roughly 3 percent normal undervote, and 22 roughly a 12-percent excess undervote. 23 Q And the total was 15 percent? 24 A The total was 15 percent. 25 Q When you talk about 12 percent, how many votes</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>

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1 does that equal to very roughly?
 2 **A Very roughly 14,000.**
 3 **Q** And you call that excess undervote?
 4 **A I call that excess undervote.**
 5 **Q** Do you understand that the expert we will hear
 6 about later in the day, Professor Herron, refers to
 7 that as suppressed vote?
 8 **A Yes. It's basically the same idea.**
 9 **Q** Professor, that is my questioning on the first
 10 of the three areas. I would like to move on to the
 11 second, which is, had this excess undervote not
 12 existed, and we had only the normal undervote, what
 13 would have happened to the outcome of the election?
 14 Can we know for sure what the vote totals would have
 15 been for each candidate if in fact the undervote rate
 16 had been normal rather than excessive in Sarasota
 17 County?
 18 **A No, we can't know for sure. What we can do is**
 19 **use statistics to try to estimate what, in all**
 20 **likelihood, it would have been.**
 21 **Q** Did you do that at the county-wide level,
 22 precinct-by-precinct level and the voter-by-voter
 23 level?
 24 **A I did it at all three levels.**
 25 **Q** Did you get consistent results at all three
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1 levels?
 2 **A Yes, I did. Regardless of the way in which I**
 3 **did it in each case, I estimate that Candidate**
 4 **Jennings would have won had the excess undervote been**
 5 **reallocated to the two candidates.**
 6 **Q** Did the margin vary somewhat based on which
 7 method you used?
 8 **A Yes. It varies depending on the method, but**
 9 **it's all in Jennings' favor.**
 10 **Q** Which of the methods: county level, precinct
 11 by precinct, or voter-by-voter, do you believe is the
 12 most accurate way to estimate the likely election
 13 results had there been a normal undervote?
 14 **A The highest level is disaggregation, which in**
 15 **this case are the ballot image data, the individual**
 16 **ballot image data, yes.**
 17 **Q** And based on your examination of that
 18 individual ballot data, what is your best estimate of
 19 Christine Jennings' likely winning margin if we had
 20 normal undervote in Sarasota County?
 21 **A It's a bit over 3,100 votes.**
 22 **Q** How did you arrive at that figure?
 23 **A Well, I arrived at that figure generally by**
 24 **first estimating the size of the excess undervote, and**
 25 **then I allocated that excess undervote to the two**
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1 candidates, relying on a set of very -- I mean very
 2 predictable patterns that occurred in the data
 3 pertaining to partisanship and partisan voting --
 4 partisan voting behavior.
 5 **Q** Before we turn to voting behavior, this
 6 estimate of the size of the excess is the same 14,000
 7 voters or 12 percent to which you earlier referred?
 8 **A Yes. Yes, it is.**
 9 **Q** Turning then to how you allocated those 14,000
 10 votes between the two congressional candidates, let me
 11 call your attention to these that we've pre-marked as
 12 No. 4.
 13 Professor, did you prepare this yourself based
 14 on the data you gathered?
 15 **A Yes, I did.**
 16 **Q** And what does it show?
 17 **A Well, what this graph shows is, it's an**
 18 **attempt to basically, first of all, describe the**
 19 **119,919 actual votes -- or votes that were cast on the**
 20 **electronic voting machines in Sarasota County. So**
 21 **that's that number in the far, lower, right-hand --**
 22 **far, lower, right-hand.**
 23 **And what I have done is, I've described those**
 24 **votes in terms of the partisan strength as exhibited**
 25 **by the voting patterns for the other races that were**
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1 at the top of the ticket.
 2 **Q** What were those other races?
 3 **A Those were five races. They were U.S.**
 4 **senator, Florida governor, attorney general, chi f**
 5 **financial officer and agriculture commissioner.**
 6 **Q** And can you explain how these 11 rows, what
 7 the meaning of these 11 rows is? It says at the top
 8 here, strong Dem minus five, at the bottom, strong
 9 Republican plus five. Can you explain how those --
 10 what those rows mean and how you created data for
 11 them?
 12 **A Yes. This refers to the column that's labeled**
 13 **partisanship scale. What I did was for every voter,**
 14 **we know how they voted on each of the races. So**
 15 **concentrating on these five races that I mentioned**
 16 **before, I first of all counted up how many times a**
 17 **voter voted for a Republican candidate. I then**
 18 **counted up the number of times that voter voted for a**
 19 **Democratic candidate.**
 20 **Then I subtracted the one number from the**
 21 **other. I subtracted the Democratic number from the**
 22 **Republican number, so that if you voted only for five**
 23 **Republicans among those races you get a score of plus**
 24 **five. If you voted for only Democrats among those**
 25 **five races you get a score of minus five. And then**
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<p>45</p> <p>1 there are intermediate values reflecting different 2 mixes of voting behavior.</p> <p>3 Q What do the columns to the right of that partisan scale represent?</p> <p>4 A Then marching to the right on this table we -- 5 I then allocate the votes -- the next column are the 6 actual votes that were cast for Jennings, among people 7 who, say, scored a minus five on the first row. Then 8 I broke down the number of people who actually voted 9 for Buchanan.</p> <p>10 The following row is the number of people who 11 undervoted among that partisan scale. The second to 12 the last row is just the total number of voters that 13 correspond with that partisan scale in Sarasota.</p> <p>14 The very final column reports the percentage 15 of voters who cast -- ended up having a vote that was 16 counted, the percentage of voters who voted for 17 Jennings in that category. For instance, in the minus 18 five strong Dem category, 97.9 percent of the voters 19 supported Jennings. At the other end, among the 20 strong Republicans, a plus five, 5.3 percent 21 supporting Jennings. As you can see when you go down, 22 the numbers are smaller reflecting support shifting 23 from Jennings to Buchanan as you move along the scale.</p> <p>24 Q A couple of times you may have said "row" when 25 ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>47</p> <p>1 Then, having estimated what the excess 2 undervote is for each of the rows, each of the 3 partisan categories, I then go over to the previous 4 exhibit. I see, for instance, in this first row that 5 97.9 percent of these voters -- of these voters 6 supported Jennings.</p> <p>7 So I use that proportion to allocate the 8 excess undervote to Jennings, to Buchanan. In this 9 case in the very first row it's 4532 to Jennings and 10 98 to Buchanan.</p> <p>11 Q And, Professor, the reason that row is so 12 lopsided is because those are people who voted 13 straight ticket?</p> <p>14 A Yes.</p> <p>15 Q You're not talking about people who undervoted 16 congressional, voted Democratic the top of the ticket 17 otherwise?</p> <p>18 A That's correct, yes.</p> <p>19 Q Carrying it across to the far right-hand 20 column, what does that signify?</p> <p>21 A The very far right-hand column is labeled, net 22 to Jennings. And that's just simply we take the 23 number of votes allocated to Jennings, subtract the 24 votes allocated to Buchanan, and that's the net to 25 Jennings. That's just the difference between the two.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>46</p> <p>1 you meant "column." For the record, you were working 2 across?</p> <p>3 A I was working across talking about the 4 columns. Sorry.</p> <p>5 Q And, Professor, just for clarification, are 6 these numbers estimates, or are these actual numbers 7 of votes cast for Jennings, Buchanan, et cetera?</p> <p>8 A The entries on this table are the actual 9 numbers reflected in the ballot image log.</p> <p>10 Q Turning to the exhibit pre-marked as No. 5. 11 Professor, is this another table that you created 12 based on the data that you gathered?</p> <p>13 A Yes, it is.</p> <p>14 Q Can you explain what it shows?</p> <p>15 A Yes. This is really a continuation of the 16 previous exhibit as well. And I think the way to get 17 into this exhibit is to start about halfway over down 18 at the bottom and note that we estimate that there 19 were roughly 14,000 excess undervotes in Sarasota 20 County. And so one of the things that this -- this 21 table does in this column that I'm pointing to here, 22 excess undervotes total, is just to allocate on a 23 proportional basis the actual undervote and converting 24 a fraction of that into the excess undervote. So 25 that's what this column right here does.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>48</p> <p>1 We then add all those up. We add up, and we get 3,551 2 votes on net shifted to Jennings.</p> <p>3 Q Just to be clear, that means that if the 4 14,000 votes had been recorded not as undervotes, but 5 as Jennings or Buchanan votes, the net swing towards 6 Jennings would be this 3,551 figure?</p> <p>7 A Yes, that's correct.</p> <p>8 Q What are the two figures to the left of that?</p> <p>9 A The sums down the columns. So this is the sum 10 of the votes that we -- of the excess undervotes that 11 we allocated to Jennings and the sum of the excess 12 undervotes that we allocated to Buchanan, 8776 to 13 Jennings, 5225 to Buchanan.</p> <p>14 Q Professor, this is all based on the assumption 15 that the excess undervote is about 14,000. Did you 16 also examine what might have happened if the excess 17 undervote had been less than that, and the normal 18 undervote had been larger than you estimated?</p> <p>19 A Yes, I did.</p> <p>20 Q Let me put up exhibit pre-marked as No. 6. 21 Professor, is this a bar graph that you 22 personally prepared based on the data that you 23 gathered?</p> <p>24 A Yes, it is.</p> <p>25 Q I keep asking you that. Are you coauthoring</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

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1 any of this work or relying on students or grad
2 students or undergraduate students to crunch these
3 numbers or reach these conclusions?

A Neither to crunch the numbers or create the displays.

6 **Q** Everything we're discussing today is your own
7 work?

8 **A Yes.**

9 **Q** Thank you. Can you please explain to us what
10 the bar graph here shows?

11 **A Well, what the bar graph shows is trying to**
12 **describe, based on the previous analysis, what the**
13 **Jennings victory would have been, the estimated**
14 **Jennings would have been if the excess undervote had**
15 **been not 14,000, but had been amounts that were less**
16 **than 14,000.**

17 **I think the way to anchor our understanding of**
18 **this exhibit is on the far right-hand bar is the bar**
19 **that represents the result I just went through. The X**
20 **axis is labeled 14,000 undervotes. And this shows the**
21 **roughly 3100-vote victory for Jennings.**

22 **Q** That's where it says 3,182, that number
23 sitting on top of the bar is the winning margin?

24 **A Exactly, yes.**

25 **Q** Thank you.

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1 **A At the other end in the bar colored red is the**
2 **situation where we assume there were no -- there were**
3 **no excess overvote -- undervotes, excuse me. There**
4 **were no excess undervotes, in which case we would be**
5 **in the position where we're in right now with the**
6 **victory for Jennings -- I'm sorry, victory for**
7 **Buchanan being at 369 votes.**

8 **And then the bars just march up. I then add**
9 **2,000, in increments of 2,000 different amounts of**
10 **excess undervotes to show what we would estimate the**
11 **Jennings victory margin to be under different**
12 **estimated excess undervotes.**

13 **Q** What is the number of excess undervotes that
14 would have been necessary to tip the likely result of
15 this election from Buchanan to Jennings?

16 **A The number where these bars would reach the**
17 **zero level here is I believe 1,456.**

18 **Q** Is it fair to say that's less than one-tenth
19 of the total undervote in Sarasota County?

20 **A Yes.**

21 **Q** So asking a purely hypothetical question, if
22 10 percent of the undervote were attributable to
23 machine malfunction and 90 percent to some other
24 causes, voter confusion or something else, would the
25 outcome of the election probably have been different

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1 than the certified result?

2 **A In all likelihood, yes.**

3 **Q** Professor, we've now covered the second of
4 your three major topics. I would like to move on to
5 the third, the question of what caused or may have
6 caused this high undervote rate in Sarasota County.
7 Can statistics give us one definitive answer to the
8 question of why this undervote rate was so high in
9 Sarasota County in this year's congressional race?

10 **A Statistics can't give us the definitive answer**
11 **about one thing. What we can do is use statistics to**
12 **try to eliminate certain competing hypotheses.**

13 **Q** Let me ask you about one of those hypotheses.
14 What do the numbers suggest, Professor, about the
15 argument that the elevated undervote rate was caused
16 by voters being turned off to this campaign, upset
17 with the negativity of it, perhaps, or just didn't
18 like these candidates?

19 **A It seems to me that that's the easiest of the**
20 **hypotheses to dismiss for a variety of reasons. I**
21 **think that the primary -- well, for a variety of**
22 **reasons.**

23 **It's important to note that, for instance, the**
24 **excess undervote within Sarasota County was only on**
25 **the electronic machines, not in -- not on the absentee**

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1 paper ballots. First -- furthermore, there was not an
2 excess undervote in this race in the other counties.

3 **So those two types of comparisons make it**
4 **pretty clear that it's unlikely to be due to the**
5 **negativity of the campaign or voter revulsion with**
6 **some aspect or rejection of both candidates.**

7 **Q** And why do you assume that the low undervote
8 rates in the other four counties couldn't coexist with
9 high negativity only in Sarasota County?

10 **A Because it's hard to imagine how you could so**
11 **isolate aspects of the race that they would only**
12 **affect Sarasota County and not affect other counties**
13 **that were also in the district. After all, it's a**
14 **fairly compact district. It's a district that's**
15 **reached overwhelmingly by one media market.**

16 **And so by and large, regardless of what county**
17 **you're living in, you are experiencing basically the**
18 **same campaign throughout the county.**

19 **Q** And that media market is the Tampa-St.
20 Petersburg TV market?

21 **A Yes, it is.**

22 **Q** Professor, I would like to address a second
23 possible hypothesis dealing with voter confusion, and
24 I would put up Exhibit 7A and Exhibit 7B. Do you
25 recognize these?

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<p>53</p> <p>1 A Yes, I do.</p> <p>2 Q And can you tell the court first what 7A,</p> <p>3 which is the one on the left, is?</p> <p>4 A Sure. Well actually both of these are on</p> <p>5 what's known as screen shots. The left is -- the left</p> <p>6 is a screen shot or what a voter would see if the</p> <p>7 voter were actually looking at the computer screen and</p> <p>8 looking at the ballot that -- the part of the ballot</p> <p>9 that has the congressional district race at the top,</p> <p>10 and then right below it the gubernatorial-lieutenant</p> <p>11 governor race down below it.</p> <p>12 Q This is a Sarasota County electronic ballot?</p> <p>13 A Yes. This is the Sarasota County ballot.</p> <p>14 Q From the IVotronic machine?</p> <p>15 A Yes, it is.</p> <p>16 Q Which page of the ballot is this?</p> <p>17 A That's on page 2, which we know by looking</p> <p>18 down -- at the very bottom of the screen there is</p> <p>19 basically some navigation information. The</p> <p>20 information in the middle tells you where you are,</p> <p>21 page 2 of 15 of this case. And then there is also</p> <p>22 navigation buttons allowing a voter to move to the</p> <p>23 previous page and move to the next page.</p> <p>24 Q And, Professor, is it correct that this is</p> <p>25 just a pointer that is on the screen shot? That's not</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC</p>	<p>55</p> <p>1 information on this summary ballot page are about?</p> <p>2 A Yes. This is a representative summary screen</p> <p>3 page. The columns represent all of the races. I will</p> <p>4 use roughly a third of the races from U.S. senator</p> <p>5 down to charter review board race. Those are in</p> <p>6 black.</p> <p>7 Here, because this particular screen shot</p> <p>8 there were no votes on the machine, it indicates in</p> <p>9 red below each of the offices, no selection made,</p> <p>10 which indicates in this case that the voter had not</p> <p>11 voted in these contests.</p> <p>12 Q When we talked earlier about these straight</p> <p>13 ticket voters, I assume it would not say "no selection</p> <p>14 made" under senator or governor, attorney general or</p> <p>15 so forth? There would be names there?</p> <p>16 A Yes. They would not be red. But there would</p> <p>17 be the names of the candidates that you had actually</p> <p>18 supported or voted for.</p> <p>19 Q So for those voters who voted straight ticket</p> <p>20 or otherwise voted for all of these top-of-the-ballot</p> <p>21 races on the left-hand column, if they undervoted the</p> <p>22 representative in Congress, is it correct that the</p> <p>23 machine should have shown in red, no selection made,</p> <p>24 only for that office, but not for the others in this</p> <p>25 column?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>54</p> <p>1 something a voter would actually see?</p> <p>2 A That's correct.</p> <p>3 Q And can you describe how the voter moves</p> <p>4 through the ballot and gets to Exhibit 7B?</p> <p>5 A Yes. Well in general the voter is presented</p> <p>6 with a series of screens like the one on the left.</p> <p>7 And when they see a choice they want to make, they</p> <p>8 touch that part of the screen, and the screen changes</p> <p>9 color, and there is an X to reflect the choice.</p> <p>10 The voter, as the voter is moving through the</p> <p>11 ballot, presses the next page button to page through</p> <p>12 the entire ballot. At the very end the voter then</p> <p>13 gets to the exhibit on the right, which is Exhibit 7B.</p> <p>14 And that is what is called the summary screen.</p> <p>15 Q And here how many pages of summary screen</p> <p>16 would there be?</p> <p>17 A In this case there are three pages of summary</p> <p>18 screen. Again, it's reflected down. There is the</p> <p>19 same similar navigation information when you get to</p> <p>20 the summary screen. In the middle it tells you how</p> <p>21 many summary screens there are. In this case there</p> <p>22 are three. This is page 1 of 3. And there is</p> <p>23 likewise the previous page, next page navigation</p> <p>24 buttons.</p> <p>25 Q Can you describe what the two columns of</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC</p>	<p>56</p> <p>1 A That's right. The others would have the name</p> <p>2 of the candidate that they had voted for and the U.S.</p> <p>3 representative in Congress would be red, no selection</p> <p>4 made.</p> <p>5 Q And is a voter allowed just to ignore this</p> <p>6 screen entirely, bypass it electronically, and move on</p> <p>7 to casting a final ballot?</p> <p>8 A No. In order to actually cast a final ballot,</p> <p>9 what the voter has to do is to page through each of</p> <p>10 the pages of the summary review screen. And it's only</p> <p>11 when they get to the very last page that they are</p> <p>12 then, the vote button, which actually casts the</p> <p>13 ballot, is activated, allowing the voter to cast a</p> <p>14 ballot.</p> <p>15 Q Why do electronic voting machines have this</p> <p>16 summary ballot or review screen on them?</p> <p>17 A This is a feature that was added to reduce</p> <p>18 voter confusion and to try to deal with the problem</p> <p>19 that was so illustrated so widely in 2000 of a large</p> <p>20 number of undervotes. So it's an attempt to give</p> <p>21 voters one last chance to review what they've done,</p> <p>22 and if they've made a mistake, either voted for the</p> <p>23 wrong person or have undervoted a race, they are then</p> <p>24 able to go back into the ballot and make the</p> <p>25 correction, either undoing the undervote or change the</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

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1 ballot to suit what they would desire to do.

2 Q So they're warned if there is an undervote?

3 A They are warned if there is an undervote.

4 Q Do you believe it's likely that the 12

5 percentage point elevation in Sarasota County's

6 undervote rate were caused solely by the design of

7 this ballot and its tendency to confuse the voters?

8 A N , I do not.

9 Q Why not?

10 A Well, I -- an important reason is that, if we

11 look at this ballot on the left, it's on the face of

12 it not a particularly confusing ballot. It does have

13 a number of offices on it, but there are many pages on

14 the ballot that have a number of offices on it. It's

15 a fairly straightforward ballot.

16 This is in comparison to other cases that are

17 well-known, where the ballot has been just on the face

18 of it perplexing. And in those cases the undervote

19 rate has been quite -- quite a bit lower than the

20 undervote rate that we exhibited here.

21 Q Let's put up the exhibit pre-marked as 7C.

22 Professor, do you recognize Exhibit 7C?

23 A Yes, I do.

24 Q Can you tell the court what it is?

25 A Yes. This is a photograph of the Palm Beach

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1 County so-called butterfly ballot from the 2000

2 presidential election.

3 Q And is that viewed by the voting experts,

4 including yourself, as a confusing or not a confusing

5 ballot?

6 A It's viewed as being the paradigmatic, the

7 example you use all the time of a confusing ballot.

8 Q Why?

9 A Well, the reason is that it is a very unusual

10 way of presenting candidates to voters. The typical

11 way that it's done -- now let me step back and remind

12 us that this ballot is a punch card ballot, so that

13 underneath this ballot there is a punch card. And

14 that punch card has a chad that the voter needs to

15 dislodge in order to reflect a vote.

16 And these pages on either side are like a

17 book, and they have the candidates on the page.

18 Typically you will have an office and the candidates

19 for that office on that one page. In this case what

20 we have is we have one office spread across two pages.

21 And so it's the spreading of the offices

22 across two pages that starts the confusion. The added

23 confusion is that, under Florida law, there is a

24 certain order in which candidates must appear on the

25 ballot. In this case Republican had to be first;

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1 Democrat had to be second, and the other candidates.

2 What happened here was, well if you were

3 reading this like a book, Republican comes first, and

4 then Democrat comes second. But then if you were just

5 scanning this whole image, you see that, well, reform

6 actually comes between Republican and Democrat.

7 Furthermore, if we were to examine very

8 closely the actual holes, the very first hole is the

9 Republican hole. But the second hole isn't associated

10 with the second candidate. It's actually associated

11 with Pat Buchanan, the reform candidate. The third

12 hole is associated with the Democrat candidate,

13 although it's the second race on the ballot.

14 So there isn't an obvious correspondence

15 between the order of the candidates and -- on the

16 written ballot and where you need to punch in order to

17 reflect your vote for these candidates.

18 Q And did this ballot lead to aberrational

19 results?

20 A Yes. It led to a couple of types of

21 aberrations. First of all, it led to just -- it was,

22 as you can see, it's easy to see how a voter -- some

23 voters intending to vote for Al Gore, the Democratic

24 candidate, might see that he was the second candidate

25 in the race, and deduce that, well, maybe there is a

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1 problem with that arrow, and in fact I need to punch

2 the second hole there, and so would in fact punch the

3 second hole, mistakenly voting for Pat Buchanan.

4 Q And roughly what percentage of the electorate

5 made that error?

6 A It was about 1 percent.

7 Q You said there was a second error as well

8 triggered by this?

9 A There was a second error as well that ended up

10 being more numerous. And that was where voters ended

11 up punching many holes, perhaps either -- recognizing

12 the error they had made or seeing that immediately to

13 the right of Gore, there were physically several holes

14 to the right of Gore, and they may have punched two or

15 three holes to the right in a misguided attempt to

16 make sure that their vote was counted for Gore in this

17 instance.

18 Q And that's an overvote?

19 A That's an overvote.

20 Q And what percentage of the electorate

21 overvoted on that ballot?

22 A As I recall, about 4 percent.

23 Q So together, the confusion caused by this

24 ballot was in the neighborhood of 5 percent?

25 A Yes.

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<p>61</p> <p>1 Q How does that relate to the level of confusion 2 caused by the ballot to its left in Sarasota County? 3 A Well, to the left we have a level that I 4 estimat to be roughly 12 percent. 5 Q Professor, I would like to put up Exhibit 7D. 6 Do you recognize this exhibit, Professor? 7 A Yes, I do. 8 Q What is that? 9 A It's a replica of -- from Orange County, 10 California, a ballot that was used in the 2003 11 gubernatorial recall election. It's the recall 12 election that recalled Governor Gray Davis and 13 installed Arnold Schwarznegger as the governor of 14 California. 15 Q Why does it serve to help measure the possible 16 magnitude of voter confusion? 17 A Well, to start off with, this is a very 18 perplexing and difficult ballot to navigate through. 19 It starts with, first of all, the voter is given the 20 opportunity to vote on whether Governor Davis should 21 be recalled or not. And then the voter is given the 22 opportunity to choose among 135 candidates whom they 23 would prefer if Davis in fact was recalled. 24 So first of all there is just a lot going on 25 on this page. In addition to that, California -- in ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>63</p> <p>1 carefully, you will notice that there are prominent 2 candidates who were major contenders like 3 Schwarznegger-Cruz Bustamante. And the thing that he 4 showed was that the minor candidates, who really, in 5 most cases, were not campaigning in any meaningful 6 way, if you were right next to a prominent candidate, 7 you actually could get a few votes, being benefited by 8 being next to a prominent candidate. 9 This is what is sometimes called an adjacency 10 error, where a voter makes an error by hitting 11 something adjacent to where they wanted to go. 12 Q What fraction of the electorate made that 13 error in California? 14 A If you accumulate together all of these excess 15 votes among the minor candidates that were next to the 16 major candidates, again, you're talking about excess 17 error rate in the area of about 1 percent. 18 Q Professor, are there other examples where the 19 magnitude of voter confusion or of ballot design 20 effects have been measured? 21 A Yes, there are. 22 Q And can you tell us what they show? 23 A Well, in another study there is -- another way 24 of approaching this is to approach -- is to think 25 about ballot order effects. Ballot order effects are ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>62</p> <p>1 California, the problem was confounded by the 2 randomization scheme that California uses to put names 3 on the ballot. 4 What they do there is, they randomly generate 5 a new alphabet, entirely randomly generate a new 6 alphabet. That alphabet is then systematically varied 7 throughout the state. So that in this instance, if 8 you knew you wanted -- regardless of how you felt 9 about recall in the first place, but you knew you 10 wanted to vote for Arnold Schwarznegger if there were 11 a recall, you couldn't rely on the fact that you 12 generally know where the letter S should be in an 13 alphabetized list to find Schwarznegger. You have to 14 rely on the fact in Orange County in this instance the 15 S's are actually close to the top of ballot. 16 In this case if you wanted to vote for 17 Schwarznegger, you have to read very small type, and 18 then you have to make sure that you either punch the 19 hole or make the mark precisely in the right place if 20 you found your candidate in order to make your choice. 21 Q And did this ballot actually empirically show 22 as having confused a significant number of voters? 23 A Yes, in a study by Professor Mike Alvarez and 24 some collaborators, one of the things they showed is 25 there was a tendency, if you examined the ballot ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>64</p> <p>1 effects due to some people being able to appear first 2 or second or third on the ballot and what order do you 3 appear on the ballot. 4 And in studies that have been done, the most 5 cited ballot order effect study is one that studied 6 Ohio, which has another sort of randomization scheme. 7 And what they discovered was that for major races at 8 the top of the ballot, that the advantage to being 9 first was in the range of 1 to 2 percent; that as you 10 went down the ballot into more or less visible races 11 and nonpartisan races, the advantage that might accrue 12 to you by being on the top of the ballot might be as 13 large as 5 percent. 14 So the ballot order effects, which is another 15 way in which ballots can guide behavior of voters in 16 that case, tended to range in the 1 to 5 percent 17 range. 18 Q So of the three that you have discussed with 19 us, the butterfly ballot in Palm Beach County, the 135 20 candidate gubernatorial ballot in California, and the 21 ballot order effect study, do any of them affect more 22 than 5 percent of the voters in the aggregate? 23 A No, they do not. 24 Q Are you aware of any ballot confusion issues 25 that have generated an undervote rate of 15 percent as ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>1 in Sarasota County this year?</p> <p>2 A No, I do not.</p> <p>3 Q Well, other than by process of elimination, eliminating the hypothesis that the negativity of the campaign drove the undervote, and the hypothesis that ballot confusion drove the entirety of the undervote, do you have any statistical basis for believing that machine failure or machine malfunction contributed to the high undervote rate in Sarasota County this year in the congressional race?</p> <p>11 A Yes, I do.</p> <p>12 Q And what is the data that you used to reach that conclusion?</p> <p>14 A Well in this case I used the data that came from the event logs and combined -- and was able to merge that information with the data in the ballot image files to analyze the undervote rate of machines based on the days in which the machines were prepared for the election.</p> <p>20 Q Professor, when you say the ballot image logs and event logs, those are logs put out through the iVotronic machine -- excuse me, through the iVotronic system based on electronic ballots cast in Sarasota County this year?</p> <p>24 A That's true, yes.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>1 explain what the column that says "all machines" refers to?</p> <p>3 A Yes. The all machines column is the summary for all the machines, these three columns. The very first column is just simply the number of machines that were prepared in each of these days. So, for instance, the very first row shows one machine prepared on September 19th.</p> <p>9 Moving to the next column, I report how many votes were subsequently counted, or cast, rather, how many were subsequently cast on those machines. And then this final column, labeled "undervote CD 13" is the undervote rate on the machines that were prepared on those given days. So that's the first three columns there, which is the general summary.</p> <p>16 Q And the next two triplets of columns, there is one labeled "election day machines," one labeled "early voting machines." Can you explain what those are?</p> <p>20 A Yes. The next two sets of columns, then, break out the general summary to show separately what happens when we examine, first of all the machines that were used on election day, and then secondly, the machines that were used in the early voting period.</p> <p>24 Q And can you tell us what the bottom two lines</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>1 Q I will put up an exhibit pre-marked as 8A. I realize there is a lot of information on that small space. But can you recognize that to be something that you prepared based on data you gathered?</p> <p>5 A Yes, it is.</p> <p>6 Q And can you explain what it shows?</p> <p>7 A Yes. What I did here was, I was able to, from the event logs, ascertain the days on which each of the electronic voting machines used in Sarasota County was prepared for the use in an election. The code in the event log is a code for, quote unquote, cleared and prepared.</p> <p>13 So I know the date on which every electronic voting machine was cleared and prepared for -- cleared and tested, I'm sorry; the term is cleared and tested -- for use in the election.</p> <p>17 Q And is that signified by this left-hand column where it says date?</p> <p>19 A Yes.</p> <p>20 Q What's the first date on which machines in Sarasota County were cleared and tested?</p> <p>24 A The first date on which they were cleared and tested was on September 19th, 2006, and the last date down at the bottom was November 5th, 2006.</p> <p>25 Q And as you work across to the right, can you</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>1 underneath the total row refer to?</p> <p>2 A Well, one of the things that I noticed immediately when I examined this table was that around -- that there is a break in the undervote rate that occurs on October 12th. And so what the last two lines do is they separate the results by machines that were prepared up to October 11th, and then -- that's the first line. And then the second line are machines prepared from October 12th until November 5th.</p> <p>10 Q And what did you see in the data about those two sets of machines, the ones prepared early and the ones prepared shortly before the election?</p> <p>13 A So what you see is that among the machines that were prepared earlier, the undervote rate is 11.8 percent, versus the machines prepared later, their undervote rate is 17.5 percent.</p> <p>17 Q Did you find any other patterns when you looked at this sort of data?</p> <p>19 A The other pattern that I discovered in addition to the pattern about date was the pattern about the busyness of the preparation. In general, there is a correlation between the number of machines that were prepared on a day and the size of the subsequent undervote rate. The more machines prepared, the higher the subsequent undervote rate.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>69</p> <p>1 Q I would like to put up exhibit pre-marked as</p> <p>2 BB. Professor, is this a graph that you prepared</p> <p>3 based on the data that you gathered?</p> <p>4 A Yes.</p> <p>5 Q And can you explain what it shows?</p> <p>6 A Yes. This graph summarizes much of the data</p> <p>7 that's also recorded in the table. So each -- sorry.</p> <p>8 Let me start down below in the lower X axis, we have</p> <p>9 each of the dates on which the machines were cleared</p> <p>10 and tested. Along the left-hand vertical axis we have</p> <p>11 the undervote rate in the 13th district.</p> <p>12 Each of the bubbles is the data point that</p> <p>13 corresponds with the undervote rate on that date. I</p> <p>14 have made the size of the bubbles proportional to the</p> <p>15 number of machines that were prepared on a general</p> <p>16 day. So if a bubble -- if one bubble is twice as</p> <p>17 large as another bubble, that means twice as many</p> <p>18 machines were reported -- I'm sorry -- were prepared</p> <p>19 on that day.</p> <p>20 Finally, I've also illustrated the days when</p> <p>21 the early vote machines were primarily prepared.</p> <p>22 Those are the bubbles in the lighter shade of blue.</p> <p>23 Q Professor, down here in the sort of bottom</p> <p>24 left-hand area, there, there and there, I don't</p> <p>25 actually see a bubble. Can you explain why not?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>71</p> <p>1 these two correlations exist, higher undervote rates</p> <p>2 later in the process and higher undervote rates when</p> <p>3 there is more -- when there are more machines being</p> <p>4 prepared on a given day?</p> <p>5 A Of course I don't have direct evidence,</p> <p>6 because I wasn't there when the machines were</p> <p>7 prepared. But a reasonable hypothesis, it seems to</p> <p>8 me, is that, as time went on, and especially as the</p> <p>9 rush of election day was emerging, it becomes easier</p> <p>10 to be inattentive to what needs to be done to prepare</p> <p>11 the machines. So that's one concern.</p> <p>12 The other concern, of course, is that as there</p> <p>13 are more machines to be prepared on a particular day,</p> <p>14 it may be easier to be inattentive. So, in both of</p> <p>15 those -- so in general, I would imagine that this is</p> <p>16 evidence that inattention may have driven up the</p> <p>17 undervote rate in these machines.</p> <p>18 Q And is this evidence consistent or</p> <p>19 inconsistent with the notion that the high undervote</p> <p>20 rate was caused by voter confusion?</p> <p>21 A No, it's totally inconsistent with the notion</p> <p>22 that the high undervote rate is caused by voter</p> <p>23 confusion.</p> <p>24 Q And why is that?</p> <p>25 A Well, because this is -- this is evidence that</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>70</p> <p>1 A Yes. Those are days when just one machine was</p> <p>2 prepared.</p> <p>3 Q And what sort of undervote rates did the</p> <p>4 machines prepared on those days, when there was not a</p> <p>5 rush, generate?</p> <p>6 A Very, very low undervote -- well very, very</p> <p>7 undervote rates compared to all of the other machines.</p> <p>8 I would point out, and this is still a relatively high</p> <p>9 undervote rate in comparison to the other comparisons</p> <p>10 that we made.</p> <p>11 Q And which of the bubbles represents the</p> <p>12 busiest day when the most machines were being prepared</p> <p>13 for the election?</p> <p>14 A Well the busiest day is this bubble right here</p> <p>15 that I'm pointing to, which is on October 17th. What</p> <p>16 this graph also helps to illustrate is how that was</p> <p>17 also the very last day on which a long series of</p> <p>18 election day machines were prepared. And immediately</p> <p>19 after that, the county went into preparing early</p> <p>20 voting machines.</p> <p>21 Q And what was the undervote rate for the</p> <p>22 machines that were prepared on that busiest day,</p> <p>23 October 17th?</p> <p>24 A It's approximately 20 percent.</p> <p>25 Q Professor, why do you believe that you --</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>72</p> <p>1 goes to the physical preparation of the machines, not</p> <p>2 to characteristics -- well, it goes to the physical</p> <p>3 preparation of the machines. But it doesn't go to the</p> <p>4 description of the ballots, which is where the</p> <p>5 confusion would come in.</p> <p>6 Q Professor, is the relationship between the</p> <p>7 undervote rate and the date on which the machines were</p> <p>8 prepared statistically significant?</p> <p>9 A Yes, it is.</p> <p>10 Q And is the relationship between the undervote</p> <p>11 rate and the busyness of the date on which the</p> <p>12 machines were prepared statistically significant?</p> <p>13 A Yes, it is.</p> <p>14 Q Given those statistically significant</p> <p>15 relationships, given that voter confusion induced by</p> <p>16 ballot design typically affects less than 5 percent of</p> <p>17 the voters, given that the undervotes were</p> <p>18 concentrated in Jennings' area of strength and that</p> <p>19 the excess undervote rate was about 12 percent, 14,000</p> <p>20 votes, do you think there is a reasonable likelihood</p> <p>21 the machine failure altered the outcome of this</p> <p>22 election?</p> <p>23 A Yes, I do.</p> <p>24 MR. HIRSCH: No further questions, Your Honor.</p> <p>25 Other plaintiffs may have.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>73</p> <p>1 THE COURT: Cross?</p> <p>2 MR. FINLEY: Go ahead.</p> <p>3 MR. THOMAS: Do you have any questions? If</p> <p>you do, ask them.</p> <p>MR. FINLEY: All right.</p> <p>6 CROSS EXAMINATION</p> <p>7 BY MR. FINLEY:</p> <p>8 Q Professor Stewart, I'm Lowell Finley, and I</p> <p>represent the voter plaintiffs in the case that's been</p> <p>10 consolidated with the case brought by Candidate</p> <p>11 Jennings. You're aware of course that my clients, the</p> <p>12 11 voters, have not retained you as an expert; is that</p> <p>13 correct?</p> <p>14 A That is correct.</p> <p>15 Q You testified as to your opinion based on your</p> <p>16 professional experience and analysis that you believed</p> <p>17 that an excessive undervote rate attributable to the</p> <p>18 voting system accounted for a sufficient number of</p> <p>19 undervotes, combined with the breakdown of those that</p> <p>20 was otherwise seen in Sarasota County, that that would</p> <p>21 have produced a victory for Jennings in the race</p> <p>22 rather than for the officially certified victor,</p> <p>23 Mr. Buchanan; is that correct?</p> <p>24 A Yes.</p> <p>25 Q And are you aware that my clients, the voter</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC</p>	<p>75</p> <p>1 Q Mr. Hirsch asked you about the infamous</p> <p>2 butterfly ballot from the 2000 election in Palm Beach</p> <p>3 County. And I believe it was your testimony that</p> <p>4 approximately 5 percent of the votes in the</p> <p>5 presidential race were affected in one way or the</p> <p>6 other by -- and resulted in aberrant votes as a result</p> <p>7 of the poor layout of the ballot; is that correct?</p> <p>8 A Yes.</p> <p>9 Q And then Mr. Hirsch asked you a question about</p> <p>10 the ballot layout in the Congressional District 13</p> <p>11 race in Sarasota County in the November 7th, 2006</p> <p>12 election. And I was unclear as -- you gave a</p> <p>13 percentage there, but I was unclear as to what you</p> <p>14 were referring to, which universe you were referring</p> <p>15 to, what percentage of what you were referring to. I</p> <p>16 just ask you to try to clarify that.</p> <p>17 A Well, I need to maybe ask you to clarify the</p> <p>18 question, because I'm not quite sure what you're</p> <p>19 asking me.</p> <p>20 Q Okay. I believe that in response to a</p> <p>21 question from Mr. Hirsch you responded that 12 percent</p> <p>22 of something was affected by the ballot layout. And I</p> <p>23 was unclear as to what it was you were referring to.</p> <p>24 A Yes. The 12 percent is the percentage of</p> <p>25 votes -- ah. The 12 percent number that I was</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC</p>
<p>74</p> <p>1 plaintiffs, are not seeking to have the court declare</p> <p>2 that either candidate is the victor and are seeking</p> <p>3 only to ask to have the court order a revote in this</p> <p>4 election?</p> <p>5 A That's my understanding.</p> <p>6 Q Now, based on your evaluation of the -- of the</p> <p>7 evidence and your conclusion as to the effect on what</p> <p>8 you believe to be the true number of voters who</p> <p>9 intended and attempted to cast a vote for Jennings, if</p> <p>10 it's your conclusion that she was, in all probability,</p> <p>11 the victor, is it fair to say that, at a minimum, your</p> <p>12 analysis indicates that there is serious doubt cast on</p> <p>13 the official outcome of the election, which resulted</p> <p>14 in the certification of Mr. Buchanan as the victor?</p> <p>15 A I think it's fair to say that, had the -- had</p> <p>16 all of the votes that were intended to be cast for the</p> <p>17 two candidates in fact been cast, then Candidate</p> <p>18 Jennings would have won. I think that's -- in all</p> <p>19 likelihood that would have happened, yes.</p> <p>20 Q I guess what I'm getting at is that as -- at a</p> <p>21 minimum, does that indicate, in your mind, that there</p> <p>22 is serious doubt as to the accuracy of the official</p> <p>23 result?</p> <p>24 A Yes, yes, there is serious doubt about the</p> <p>25 accuracy of the official result.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC</p>	<p>76</p> <p>1 referring to is the -- is -- I believe was the excess</p> <p>2 undervote in Sarasota County, which -- which I am</p> <p>3 saying I have serious doubts about whether that is</p> <p>4 entirely due to voter confusion.</p> <p>5 Q Okay. So -- but the 12 percent figure when</p> <p>6 you gave it, was there a reference to the overall</p> <p>7 excessive undervote rate, according to your</p> <p>8 calculations, that you had testified to earlier?</p> <p>9 A If I understand your question, the 12 percent</p> <p>10 in that case was -- was -- is the amount of the</p> <p>11 excess -- is the percentage of all votes, which is the</p> <p>12 excess undervote in Sarasota County.</p> <p>13 MR. FINLEY: Thank you. No further questions.</p> <p>14 CROSS EXAMINATION</p> <p>15 BY MR. THOMAS:</p> <p>16 Q Good afternoon, Professor Stewart.</p> <p>17 A Good afternoon.</p> <p>18 Q My name is Harry Thomas, counsel for ES&S.</p> <p>19 I would like to start with the last two</p> <p>20 exhibits that you talked about. Now, on November the</p> <p>21 20th, if I understand correctly, you prepared a</p> <p>22 declaration that was attached to the plaintiff's</p> <p>23 complaint in this case; correct?</p> <p>24 A Yes.</p> <p>25 Q And do you have a copy of your declaration on</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>1 the witness stand with you? 2 A I do not. 3 MR. THOMAS: If I may approach, Your Honor? THE COURT: Certainly. THE WITNESS: Thank you. 6 BY MR. THOMAS: 7 Q That is a copy of your November 20, 2006 8 declaration; correct, sir? 9 A Yes, it is. 10 Q The two charts, I believe they're 8A and 8B. 11 A Yes. 12 Q The information that you placed in those 13 exhibits, that's information that you have put 14 together since you prepared your November 20, 2006 15 declaration; correct? 16 A Yes, it is. 17 Q And if I understand the chart 8A, that's a 18 chart which indicates when particular voting machines 19 in the various precincts within Sarasota County were 20 prepared for election; is that correct? 21 A Yes, sir. 22 Q Could you tell me, based on your chart, 8A, or 23 any other information available to you, on what date 24 was the iVotronics machine in precinct 105, bearing 25 serial number V0105192, what date was it prepared, ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>1 bubble chart that you've put up here that there is in 2 fact -- there has been a machine malfunction or a 3 software bug that caused the undervote in Sarasota 4 County in the Congressional District 13 race? 5 A What this information draws my attention to -- 6 Q Could you answer my yes yes or no, and you can 7 explain it. 8 A Would you repeat your question. 9 MR. THOMAS: Could you read it back, ma'am. 10 (Pending question read). 11 A This information is not evidence of that, 12 correct. 13 BY MR. THOMAS: 14 Q Thank you, sir. Let's turn to the report that 15 we did have an opportunity to look at before today. 16 In your declaration that's dated November 20, 2006, 17 you identify five key conclusions; correct? 18 A I believe so, yes, sir. 19 Q And I believe that those start on page 2? 20 A Yes, sir. 21 Q Now, on page 2 of your declaration, you state 22 that, comparison of the undervote rates in different 23 counties on different machines and under different 24 modes of voting lead to the conclusion that the 25 difference in undervotes was caused by the use of the ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>1 sir? 2 A I don't know that information. I don't have 3 it in my mind. I have that information in the files 4 that I have, but I don't know -- 5 Q Do you have them with you today in the 6 courtroom? 7 A No, I do not. 8 Q Would the same be true if I asked you on what 9 date the machine in precinct 118, bearing serial 10 number V0106437, what date it was prepared, you 11 couldn't tell me that either; could you? 12 A Not today, no, sir. 13 Q So you don't know where on your bubble chart 14 those two machines would fall; correct? 15 A That's correct. 16 Q And isn't it also correct, sir, that the time 17 of preparation of one of the iVotronics voting 18 machines has absolutely nothing to do with whether 19 there is a software bug in the source code or some 20 kind of hardware malfunction? 21 A I have -- I'm not a software engineer, and 22 I -- I have no information about that. I would be -- 23 that would be a surprising thing to me. But I don't 24 have any information about that. 25 Q So you can't draw a conclusion from this ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>1 iVotronic electronic voting machine in Sarasota 2 County; correct? 3 A Yes, sir. 4 Q Saying that the difference in undervotes was 5 caused by the use of electronic voting machines is not 6 the same as saying that the undervotes were caused by 7 electronic voting machine malfunction; correct, sir? 8 A It -- correct. 9 Q Two counties, Charlotte County and Sarasota 10 County, use the iVotronic voting machine for voting, 11 with the exception of the absentee ballots cast in 12 those two counties; correct? 13 A Yes, sir. 14 Q Now, in your declaration you only provide a 15 comparison of the undervote in Charlotte County and 16 Sarasota County in the Congressional District 13 race; 17 is not that correct? 18 A That is correct. 19 Q Your declaration does not address or compare 20 the undervotes that occurred in other races in 21 Charlotte and Sarasota County using the iVotronics 22 machine; correct? 23 A I believe that's true, yes, sir. 24 Q For example, your declaration of the work 25 you've done does not look at the undervote that ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: center;">81</p> <p>1 occurred in the attorney general's race in Charlotte 2 County using the iVotronic machine; does it? 3 A The report does not have that, as I recall. 4 Q You're aware of the percentage of that 5 undervote; are you not, sir? 6 A I'm aware that it's really quite high, yes, 7 sir. 8 Q Higher than the undervote in the Congressional 9 District 13 race; correct? 10 A I believe that's true, yes, sir. 11 Q And the only reason that race is of no 12 interest is that the winning margin was so great that 13 the undervote wouldn't have made any difference; 14 correct? 15 A I suppose that's a reasonable statement. 16 Q You do also agree that the electronic voting 17 machines used in Sarasota did not produce unusually 18 high undervote rates in other races in Sarasota 19 County; correct? 20 A That's correct. 21 Q And you would also agree that there was no 22 high undervote rate in the Congressional District 13 23 race in Charlotte County; correct? 24 A That's correct. 25 Q Your declaration and your testimony here today ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">83</p> <p>1 undervote was due to the ballot design placed on the 2 iVotronic voting machines in Sarasota County; correct? 3 A It's not inconsistent with that being one 4 cause, yes, sir. 5 Q And at page 9 of your declaration you state 6 that, the fact that the undervote rate in the 7 Congressional District 13 race was so much higher in 8 Sarasota County than the rest of District 13, that you 9 can rule out the possibility that the undervote rate 10 was caused by voter revulsion to a negative campaign; 11 correct? 12 A Yes, sir. 13 Q And I believe you testified to that earlier 14 today? 15 A Yes, sir. 16 Q However, the fact that the undervote rate in 17 the Congressional District 13 race was so much higher 18 in Sarasota County than the rest of District 13 does 19 not allow you to rule out that ballot layout was the 20 cause of the undervote in Sarasota County; correct? 21 A Could you repeat that question again? I 22 apologize. 23 Q Sure. The fact that the undervote rate in 24 Congressional District 13 was so much higher in 25 Sarasota County than the rest of the District 13, that ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: center;">82</p> <p>1 provides no analysis of the ballot layout differences 2 between the ballot that was on the iVotronic machine 3 in Charlotte County compared to the ballot that was 4 used in Sarasota County; is that correct? 5 A That's correct. 6 Q Nevertheless, you would agree that only in 7 Sarasota was the Congressional District 13 race placed 8 on the same ballot screen with the governor's race; 9 correct? 10 A That's correct. 11 Q At page 8 of your declaration, you state that 12 because the undervote rates in Sarasota County among 13 early votes and election day votes are similar and in 14 stark contrast with the absentee undervote rates, it 15 is reasonable to conclude that the higher undervote 16 rates among the early votes and the election day votes 17 was caused by the use of the iVotronic electronic 18 voting machines; correct, sir? 19 A Yes, sir. 20 Q Once again, that conclusion is not the same as 21 saying that the high undervote rates were caused by a 22 machine malfunction or a software bug; correct? 23 A That does not say that, that's correct. 24 Q And the conclusion that you stated at page 8 25 is not inconsistent with the conclusion that the ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">84</p> <p>1 fact alone does not allow you to rule out ballot 2 layout as the cause of the undervote; correct? 3 A That fact alone, that's correct. 4 Q On page 2 of your declaration you state that 5 the undervote rate in the 13th district was anomalous 6 when compared to other county-wide races that were 7 contested in Sarasota County; correct? 8 A Yes, sir. 9 Q That conclusion was based only on your 10 comparison of undervoting in county-wide races in 11 Sarasota County to that of undervotes in the 13th 12 district; correct? 13 A Yes, sir. 14 Q That statement does not mean that the 15 undervote rate in the 13th district was anomalous when 16 compared to the undervote rates in other counties and 17 other races within the 13th district; does it? 18 A Could you repeat that question again? I 19 believe I got it, but I want to make sure I got it. 20 Q The statement that I read to you from your 21 declaration, that doesn't mean that the undervote rate 22 in the 13th district was anomalous when compared to 23 the undervote rates in other counties in other races 24 within the 13th district; correct? 25 A To the best of my knowledge, that's correct, ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>85</p> <p>1 yes, sir.</p> <p>2 Q At page 2 and also page 14 of your declaration</p> <p>3 you state that you can estimate the number of excess</p> <p>4 undervotes that were created in the Congressional</p> <p>5 District 13 race because of problems associated with</p> <p>6 the use of the electronic voting machine; correct?</p> <p>7 A Yes, sir.</p> <p>8 Q In your discussion of the key conclusions for</p> <p>9 items 1 through 4 in your November 20 declaration, you</p> <p>10 never identify any specific problems that are</p> <p>11 associated with the use of electronic voting machines</p> <p>12 that caused excessive undervoting; did you?</p> <p>13 A No, sir, I did not.</p> <p>14 Q And it would be fair, I think, to characterize</p> <p>15 the work you have performed as a statistical analysis</p> <p>16 of the undervote; would that be correct?</p> <p>17 A Yes, it is.</p> <p>18 Q You have no statistical evidence that a</p> <p>19 software bug caused the excessive undervote in</p> <p>20 Sarasota County; correct?</p> <p>21 A I want to be precise in my answer. The</p> <p>22 statistical evidence, if I may elaborate just a bit,</p> <p>23 the statistical evidence I have is about the</p> <p>24 behavioral voters using particular types of machines.</p> <p>25 So as far as the statistical evidence is concerned</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>87</p> <p>1 electronic voting machines actually malfunctioned as</p> <p>2 you stated in your summary of your point; isn't that</p> <p>3 correct?</p> <p>4 A Well, there is no evidence of a physical</p> <p>5 malfunction of the machines, if that's what the</p> <p>6 question is.</p> <p>7 Q In fact, in your text, Doctor, you didn't</p> <p>8 mention anything about a malfunction in that section</p> <p>9 in your report; did you?</p> <p>10 A I mention nothing about a physical</p> <p>11 malfunction, no, sir.</p> <p>12 Q The only place you mentioned it was in your</p> <p>13 little keynote summary, which heads that section of</p> <p>14 your report.</p> <p>15 A That's the only place I used that word, yes,</p> <p>16 sir.</p> <p>17 Q Yes. On page three of your declaration, at</p> <p>18 paragraph five, you state that, the level of</p> <p>19 undervoting in Sarasota County greatly exceeds the</p> <p>20 undervotes that were estimated to have occurred in</p> <p>21 other well established cases of voter confusion;</p> <p>22 correct?</p> <p>23 A Yes, sir.</p> <p>24 Q You then state that, this conclusion suggests</p> <p>25 a possibility that the undervotes in Sarasota County</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>86</p> <p>1 presented in this report, it provides no direct</p> <p>2 evidence of any particular causes.</p> <p>3 Q Thank you. And it certainly provides no</p> <p>4 direct evidence of any problem with the source code or</p> <p>5 any software bugs or even any hardware malfunction;</p> <p>6 does it?</p> <p>7 A It does not deal with those things directly,</p> <p>8 no, sir.</p> <p>9 Q Now, on pages 2 through 3 of your declaration</p> <p>10 that starts at paragraph 4, you conclude that, the</p> <p>11 excessive undervote in Sarasota County, coupled with</p> <p>12 the support received by Jennings, makes it likely</p> <p>13 that, had the electronic machines not malfunctioned,</p> <p>14 that Jennings would have won; correct?</p> <p>15 A Yes, sir. That's what it says.</p> <p>16 Q That's the first time in your declaration,</p> <p>17 sir, that you use the term and refer to the machines</p> <p>18 malfunctioning.</p> <p>19 A Yes, sir.</p> <p>20 Q The text that accompanies that summary out of</p> <p>21 number 4 is at pages 24, runs through the top of page</p> <p>22 35 of your report; does it not?</p> <p>23 A Yes, it does.</p> <p>24 Q And nowhere in the text supporting your</p> <p>25 conclusion do you provide any evidence that the</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>88</p> <p>1 were not solely due to voter confusion, but other</p> <p>2 factors related to machine malfunction; correct?</p> <p>3 A Yes, sir.</p> <p>4 Q The text of your declaration that discusses</p> <p>5 those two conclusions, Doctor, is at pages 35 through</p> <p>6 9; correct -- 35 through 39; correct?</p> <p>7 A Thirty-five to 39. Yes, sir.</p> <p>8 Q You provide no evidence or information</p> <p>9 regarding any machine malfunction in those pages of</p> <p>10 text; do you, sir?</p> <p>11 A No, I do not.</p> <p>12 Q And saying that something is a substantial</p> <p>13 possibility is not the same as saying that something</p> <p>14 was a substantial cause; correct?</p> <p>15 A Well those are two different statements, and</p> <p>16 they are not the same thing.</p> <p>17 Q And in the text at pages 35 through 39, you</p> <p>18 never identify whatever factors there are that you</p> <p>19 contend are related to machine malfunction; correct?</p> <p>20 A Not in that section, no, sir.</p> <p>21 Q Now, at page 36 you do identify two possible</p> <p>22 causes of the undervotes in Sarasota County in the</p> <p>23 Congressional District 13 race. And one of the</p> <p>24 possible causes that you identify is machine</p> <p>25 malfunction; correct?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>89</p> <p>1 A Excuse me. Is that page 36?</p> <p>2 Q Yes.</p> <p>3 A Could you -- could I ask where in particular</p> <p>4 in the --?</p> <p>5 Q Perhaps I've written down the wrong page. Let</p> <p>6 me check.</p> <p>7 A I believe you are right.</p> <p>8 Q In the particular case, the vote in Sarasota</p> <p>9 County, there are two major potential explanations for</p> <p>10 why there were so many excess undervotes.</p> <p>11 A Yes, sir.</p> <p>12 Q One possible explanation is voter confusion.</p> <p>13 The second possible explanation is machine</p> <p>14 malfunction.</p> <p>15 A Uh-huh.</p> <p>16 Q Now, in your declaration, there at page 36,</p> <p>17 you support your conclusion of a possible cause of</p> <p>18 machine malfunction by relying on a newspaper report</p> <p>19 stating that most callers to the newspaper reported</p> <p>20 voting problems; correct?</p> <p>21 A That's the citation in that paragraph, yes,</p> <p>22 sir.</p> <p>23 Q That's the sole basis in that section of your</p> <p>24 report for a conclusion that there was a machine</p> <p>25 malfunction; correct, sir?</p> <p>ACCURATE STENOTYPE REPORTERS, INC.</p>	<p>91</p> <p>1 A Yes, sir.</p> <p>2 Q And you testified about those earlier here</p> <p>3 today. And that's the butterfly ballot in Florida in</p> <p>4 the 2000 presidential election and a race in</p> <p>5 California where a voter was asked to choose a</p> <p>6 candidate from a list of 135 candidates; correct?</p> <p>7 A Yes, sir.</p> <p>8 Q Looking only at those two cases, that's a</p> <p>9 fairly small sample size; isn't it, sir?</p> <p>10 A Well, these sorts of events have not been well</p> <p>11 documented, sir.</p> <p>12 Q Now, let's talk about the California example</p> <p>13 for a minute. And as you said, that was where there</p> <p>14 was a large list of candidates with lesser known</p> <p>15 candidates getting the benefit of being close -- in</p> <p>16 close proximity to better known candidates. You call</p> <p>17 that an adjacent mistake?</p> <p>18 A Adjacency error.</p> <p>19 Q Now, the ballot design in California wasn't</p> <p>20 anywhere close to the ballot design that you saw down</p> <p>21 in Congressional District 13; was it?</p> <p>22 A No. It was quite different.</p> <p>23 Q And really the problem in the California</p> <p>24 example involved an issue of people voting for the</p> <p>25 wrong person, not an undervote issue; was it?</p> <p>ACCURATE STENOTYPE REPORTERS, INC.</p>
<p>90</p> <p>1 A That is -- that's the citation, yes, sir.</p> <p>2 Q You didn't actually interview any voters in</p> <p>3 the Congressional District 13 race to determine the</p> <p>4 nature of the difficulties supposedly encountered; did</p> <p>5 you?</p> <p>6 A N , sir.</p> <p>7 Q And you cannot identify even one voter who</p> <p>8 encountered difficulties using the review screen</p> <p>9 that -- to such an extent they were prevented from</p> <p>10 casting a ballot in the Congressional District 13</p> <p>11 race; correct?</p> <p>12 A That's correct.</p> <p>13 Q You don't even know how many voters actually</p> <p>14 called the newspaper and reported the voting problems</p> <p>15 that you based your conclusion for machine malfunction</p> <p>16 on; do you, sir?</p> <p>17 A Off the top of my head, no, sir.</p> <p>18 Q One of the possible causes of the undervote</p> <p>19 rate in Sarasota County that you identified is voter</p> <p>20 confusion caused by ballot layout; correct?</p> <p>21 A Yes, sir.</p> <p>22 Q And your declaration then discusses two</p> <p>23 documented cases that you claim are the best known</p> <p>24 cases of ballot design leading to voter confusion;</p> <p>25 correct?</p> <p>ACCURATE STENOTYPE REPORTERS, INC.</p>	<p>92</p> <p>1 A That was a problem of people making mistakes,</p> <p>2 and they actually in fact voted --</p> <p>3 Q So you're analyzing a California case where</p> <p>4 voters are mistakenly voting for the wrong person and</p> <p>5 trying to draw a comparison to an undervote situation</p> <p>6 in Sarasota County; is that correct?</p> <p>7 A Well I am trying to get an estimate of the</p> <p>8 size of these, yes, sir.</p> <p>9 Q You're trying to get an estimate in size by</p> <p>10 using a race that doesn't involve an undervote and</p> <p>11 taking that estimate and applying it to Congressional</p> <p>12 District 13; are you not, sir?</p> <p>13 A I am using it as a comparison, yes, sir.</p> <p>14 Q The Palm Beach butterfly ballot that you spent</p> <p>15 some time testifying about today, once again, the</p> <p>16 design of that ballot is not at issue in the</p> <p>17 Congressional District 13 case; is it?</p> <p>18 A No, it is not.</p> <p>19 Q And once again, didn't the poor ballot design</p> <p>20 in that case result in votes being cast for the wrong</p> <p>21 person rather than being an undervote?</p> <p>22 A Mostly for the wrong person or overvotes, very</p> <p>23 little about undervotes, yes, sir.</p> <p>24 Q Then you talked about one other situation, and</p> <p>25 that is where candidates who are listed first on the</p> <p>ACCURATE STENOTYPE REPORTERS, INC.</p>

<p style="text-align: right;">93</p> <p>1 ballot sometimes pick up more votes than folks who 2 appear lower down in the listing of candidates; 3 correct?</p> <p>A That's correct. Q Every ballot has to have somebody listed 6 first; don't they? 7 A Yes, sir, they do. 8 Q And that's not really an issue of voter 9 confusion caused by poor ballot design? 10 A Well it is about voters' eyes being drawn to 11 one place or the other. I think it's relevant to 12 confusion. It's not about confusion. 13 Q As you say, every ballot, somebody has to be 14 shown first? 15 A Somebody is going to be first, and somebody is 16 going to be second, yes, sir. 17 Q And when -- in those situations, somebody may 18 vote for the candidate listed first on the ballot for 19 reasons other than being confused; correct? 20 A There are other reasons, yes, sir. 21 Q So that example where you're talking about ... 22 somebody being first on the ballot, that really has 23 nothing at all to do with poor ballot design causing 24 an undervote? 25 A I think it does, because it gives us an idea ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">95</p> <p>1 a little bit. I would just ask if the court or 2 witness would like to take a quick break at this 3 time. 4 THE COURT: Would you like a few minutes, sir? 5 THE WITNESS: I would appreciate it. 6 (Discussion off the record). 7 (Short recess). 8 THE COURT: Go ahead. 9 CROSS EXAMINATION 10 BY MR. BURHANS: 11 Q Thank you, Your Honor. Good afternoon, 12 Professor Stewart. My name is Glenn Burhans. I 13 represent Vernon Buchanan. If you would indulge me 14 for a minute, I would like to explore -- I want to see 15 if you will agree as a basic tenet of any scientific 16 expert's research practices in forming an opinion, and 17 that is basically, the opinion is only as good as the 18 data upon which the expert relies, as well as the 19 methodology that the expert applies to the data; 20 correct? 21 A Yes. 22 Q That's really the old GIGO principle, garbage 23 in, garbage out? 24 A Correct. 25 Q Now can you characterize for me your ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: right;">94</p> <p>1 about how many voters can be influenced by the design 2 of the ballot. 3 Q Did you do any work with regard to the 4 demographics of the precincts in Sarasota County where 5 the undervotes occurred, sir? 6 A I did some work that had some racial 7 characteristics of the primaries. That's the 8 demographic work I was able to do, yes, sir. 9 Q In fact, the rate of voter confusion may be 10 affected by -- or the demographics of a precinct may 11 account for some of the voter confusion that occurs; 12 correct? 13 A Demographics can affect how one approaches a 14 ballot, yes, sir. 15 Q Less educated voters may find a particular 16 ballot to be more confusing than educated voters? 17 A That could be, yes, sir. 18 Q And elderly voters could consider a ballot to 19 be more confusing than younger voters; correct? 20 A That could be. 21 Q Have you testified as an expert before in 22 election contests, sir? 23 A No, sir, I have not. 24 MR. THOMAS: That's all the questions I have. 25 MR. BURHANS: Your Honor, we've been going for ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">96</p> <p>1 estimation of the reliability of the data that you've 2 used in your calculations? 3 A I've used a lot of different data. If you 4 would like, I can move through that. The -- I trust 5 that the election returns provided by the counties are 6 the election -- are accurate election returns. 7 Likewise, I trust that the ballot image data and that 8 the machine logs that were provided by the county were 9 also the actual data and are high quality. And they 10 appear to be all of high quality and consistent. 11 Q So you have no reason to doubt the reliability 12 of the data provided to you in this case? And I will 13 be specific. Let's talk about the ballot images. You 14 have no reason to doubt the validity of the ballot 15 images and the data contained therein? 16 A I've compared that against the returns, for 17 instance, and they're consistent, yes, sir. 18 Q And the same question for the audit logs that 19 you've reviewed or the event logs that you've 20 reviewed, you have no doubt as to the reliability of 21 those materials? 22 A They appear to be genuine, and they appear to 23 be reliable. 24 Q So we can agree that the data basis for your 25 opinion in your view is quite sound? ACCURATE STENOGRAPHY REPORTERS, INC.</p>

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1 **A I think the data are very good here, yes.**
 2 **Q** When you talked about the voter abstention
 3 hypothesis, do you recall that testimony? Let me
 4 rephrase it. The theory that voters were turned off
 5 to the election because of the nastiness --
 6 **A Right, yes, sir.**
 7 **Q** And you didn't perform any poll in the county
 8 to determine voter reaction to a race; did you?
 9 **A I did not, no, sir.**
 10 **Q** And you didn't interview a single voter to
 11 determine their attitude towards the nastiness of the
 12 race; did you, sir?
 13 **A N , I did not.**
 14 **Q** In fact, you didn't do anything to ascertain
 15 voter reaction to the nastiness of the race, to the
 16 extent that there was any, except crunching numbers
 17 and say that, well, statistically voter abstention or
 18 voter distaste is not a viable hypothesis?
 19 **A That was a basis that I drew in my**
 20 **conclusions, yes.**
 21 **Q** I think you defined undervote as a situation
 22 where the voter does not choose a candidate; is that
 23 correct?
 24 **A An undervote is when a -- strictly speaking,**
 25 **is when a legal vote is not recorded for a voter.**
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1 **Q** Well didn't you say it was when the voter does
 2 not choose a candidate?
 3 **A I may have said that, yes.**
 4 **Q** So you misspoke?
 5 **A I was not being precise there. What I usually**
 6 **say when people ask me to define an undervote is to be**
 7 **very precise and note that it's when a legal vote is**
 8 **not reflected for a candidate because of the lack of a**
 9 **choice for any of the candidates on the ballot. It's**
 10 **a point where sometimes you have to use the word**
 11 **"choice," but I want to make it very clear that**
 12 **sometimes there is a blank -- and actually in**
 13 **Massachusetts I would call it a blank, because we use**
 14 **paper, and things can actually be blank.**
 15 **The idea sometimes there is a blank because of**
 16 **a conscious choice, and sometimes it's for other**
 17 **reasons.**
 18 **Q** Thank you for the clarification. And would
 19 the same clarification apply to your definition of an
 20 excess undervote?
 21 **A A similar definition would apply, yes. It's**
 22 **when the election officials record, observe multiple**
 23 **votes in a race, more votes cast in the race by a**
 24 **voter than they are legally allowed to do.**
 25 **Q** You use the phrase, "legal vote." If you
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1 wouldn't mind telling us what you -- how you define
 2 that term, "legal vote."
 3 **A When I use that term, and I use it -- I've**
 4 **used that term in my research.**
 5 **MR. HIRSCH:** Objection, Your Honor. This is
 6 not a witness on the law.
 7 **THE COURT:** He used the term. I will let him
 8 explain why he uses it. I realize he's not an
 9 attorney. We're not asking for a legal opinion.
 10 We're asking for his definition.
 11 **A I've used that term in my research before to**
 12 **make it clear to an academic audience that there are**
 13 **oftentimes various standards in the world used by**
 14 **election officials to determine what counts as a vote**
 15 **and what --**
 16 **BY MR. BURHANS:**
 17 **Q** How are you using it here in your testimony
 18 today?
 19 **A I am using it in the way as an academic.**
 20 **Q** What does the phrase mean, "legal vote," as
 21 you've used it here today?
 22 **A As I use it here today, a legal vote, when I**
 23 **refer to legal vote, I mean that a vote that, say, the**
 24 **supervisor of elections in a particular county would**
 25 **regard as being a legitimate vote in favor of one**
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1 **candidate or the other.**
 2 **Q** And that would be under the applicable state
 3 law? Is that what your reference to what the
 4 supervisor of the county canvassing
 5 commission considers to be a legitimate vote under
 6 state law?
 7 **A That's typically how I would use it, yes, sir.**
 8 **Q** Do you know what a legal vote is under Florida
 9 law?
 10 **A I have not studied Florida law, no, sir.**
 11 **Q** We talked about normal undervotes and excess
 12 undervotes. And if I understand your testimony
 13 correctly, the normal undervote is what you would
 14 expect to see absent the occurrence of some sort of
 15 peculiar happenstance. I think you used the word
 16 "peculiar happening"; is that correct?
 17 **A Yes, sir.**
 18 **Q** And the excess undervote you defined as the
 19 amount of undervote above the formal; correct?
 20 **A Yes, sir.**
 21 **Q** So your definition presupposes some
 22 malfunction or peculiar happening; correct?
 23 **A It presupposes some peculiarity associated**
 24 **with an election.**
 25 **Q** So if there is no peculiarity, in this case a
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<p>1 malfunction, then wouldn't the excess undervote really 2 just be normal?</p> <p>3 A An excess undervote can only be defined with respect to a particular race. But the normal undervote can only be defined with respect to a 6 particular race, particular office. The excess undervote can only be defined with respect to a 8 particular election year for that office.</p> <p>9 Q Well let me ask it to you this way, then, 10 Doctor. Absent this peculiar happening, you cannot 11 have an excess undervote; correct? And that's because 12 the presupposition in your definition is the 13 occurrence of this peculiar happening?</p> <p>14 A Without a peculiar happening there cannot be -- I don't -- without -- well, without a peculiar 16 happening, by the definition here, you're not going to 17 bsrve an excess undervote.</p> <p>18 Q I think you testified again that in this 19 instance we had a normal undervote of about 3 percent 20 and an excess undervote of approximately 12 percent; 21 is that correct?</p> <p>22 A Yes, sir.</p> <p>23 Q So if there were some peculiar happening, 24 i.e., a malfunction, we would expect to see those 25 undervote percentages, for example, in the excess</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>1 would get exactly the same results, if that's what 2 y u're asking.</p> <p>3 Q When you were asked whether Christine Jennings 4 would have won absent some sort of malfunction, you 5 said, we can't know for sure. We can only estimate 6 how voters would have voted had there been a 7 malfunction. Did I capture the essence of your 8 testimony correctly, sir?</p> <p>9 A I believe so.</p> <p>10 Q Now, you didn't actually analyze how voters 11 voted to reach that conclusion; correct? You just 12 speculated, based upon statistics, how they would have 13 voted?</p> <p>14 A I used statistical models to estimate how they 15 would have voted, yes, sir.</p> <p>16 Q You never asked a single voter for whom they 17 intended to vote for in this election; did you?</p> <p>18 A I did not. Directly I did examine how they 19 cast ballots in other races, though.</p> <p>20 Q And you cast ballots in other races by 21 reviewing the ballot images?</p> <p>22 A Yes, sir.</p> <p>23 Q And you consider your analysis, based upon 24 that review of the ballot images, to be accurate?</p> <p>25 A Yes, I do.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>1 undervotes, the same percentages anytime we ran 2 elections on that machine?</p> <p>3 A No. The way that I would define a normal 4 undervote would be what you would observe if you 5 ran -- if you could hypothetically rerun that election 6 time and time and time again under a variety of 7 circumstances with a variety of candidates across -- 8 either across a long period of time, for instance.</p> <p>9 Q And the same would be true with respect to the 10 excess undervote, that if you could theoretically 11 rerun the election time after time after time again, 12 you would see the same 12 percent undervote in that 13 result?</p> <p>14 A If we observed 12 percent undervote across a 15 variety of races under different circumstances, that 16 would suggest that for that race, that office, the 17 normal undervote was 12 percent.</p> <p>18 Q Well I'm not talking about normal, sir. I'm 19 talking about if -- I understand what you're saying. 20 But I'm asking you about the excess undervote. If we 21 could run the race over and over and over again, we 22 would expect to see the same 12 percent excess undervote rate each time we reran that election?</p> <p>24 A If you reran it under precisely the same 25 circumstances in every respect, I would imagine you</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>1 Q So if I'm correct in understanding you, you 2 did not apply some sort of standard to determine voter 3 intent; is that correct?</p> <p>4 A Could you ask the question again?</p> <p>5 Q Sure. You -- in looking at the ballot images 6 to look at voting patterns, you did not actually apply 7 some sort of objective standard that could be applied 8 to determine the voter's intent in any given race?</p> <p>9 A Well I did apply an objective standard, and 10 that objective standard was to observe how people -- 11 to take the class of people who had not undervoted in 12 the 13th Congressional race, observe their partisan 13 voting behavior on the ballot, and then I made an 14 assumption. And the assumption was that, among the 15 excess undervotes that we could recovery in this -- in 16 this exercise, that among these recovered excess 17 undervotes, that they would have -- these people would 18 have voted at the same rate for Jennings or Buchanan 19 as corresponding people who had in fact -- In fact, 20 you know, had a ballot recorded for them in the 13th 21 district.</p> <p>22 Q And that was not done by asking voters how in 23 fact they would have voted or how in fact they did 24 vote in that race; correct?</p> <p>25 A That is correct.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>105</p> <p>1 Q And so my question is, you have not applied 2 any standard that could be used to determine voter 3 intent?</p> <p>4 A Well maybe it's a difference of definition of 5 any standard. But I applied rules that I think are 6 reasonable, given the way that academic researchers in 7 elections study these things.</p> <p>8 Q You can't prove the actual number of excess 9 votes in this case; can you?</p> <p>10 A I cannot prove that it was a particular 11 number, no, sir.</p> <p>12 Q And as a matter of fact, for that reason you 13 offer a different range of numbers, of this so-called 14 excess vote, and by applying a comparison at different 15 levels of excess undervotes, you were able to 16 calculate the net gain or loss for the candidates; 17 correct?</p> <p>18 A At different levels of excess undervote, yes.</p> <p>19 Q Can you tell me which of those is right?</p> <p>20 A I can tell you the one that I believe is the 21 closest to being correct.</p> <p>22 Q And which one is that?</p> <p>23 A I believe the one that's closest to being 24 correct is the one that's reflective of the estimated 25 14,000 excess undervotes.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>107</p> <p>1 Q Now, Doctor, you will recall there were 2 significant levels of undervoting in other races 3 besides Congressional District 13; correct?</p> <p>4 A Significant in Sarasota County or in other --</p> <p>5 Q Yes, sir.</p> <p>6 A Yes, sir, there were significant undervote 7 rates in other races.</p> <p>8 Q You see that in a lot of judges races; 9 correct?</p> <p>10 A Judicial retention races, yes.</p> <p>11 Q I see undervote rates of 23 percent, 24 12 percent. Is that in keeping with your recollection?</p> <p>13 A That sounds right.</p> <p>14 Q Twenty-seven percent?</p> <p>15 A Yes.</p> <p>16 Q Can you tell me what caused the undervotes in 17 those certain circumstances?</p> <p>18 A There is a lot of research in political 19 science on this. And judicial undervotes tend not to 20 receive a lot of undervotes, and it's believed --</p> <p>21 Q I want to know what your explanation is for 22 the cause of these undervotes in this race, if you 23 have one.</p> <p>24 A My explanation would be drawn from political 25 science research and has to do with the low</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>106</p> <p>1 Q That would be the highest number; correct?</p> <p>2 A That would be the highest number.</p> <p>3 Q What's the basis for that assumption?</p> <p>4 A The basis for that assumption was by -- I'm 5 going through a technique first of all that tried to 6 estimate what the most likely size of the excess 7 undervote was, given the relationships that I observed 8 among the various races in Sarasota County. So that 9 first of all pegged the size of the excess undervote.</p> <p>10 I assumed -- I had to make an assumption, and 11 I assumed that the relationship governing the 12 undervote rate for the congressional district race fit 13 among all of the other relationships, among all the 14 other county-wide ballots in the county. So I wasn't 15 guessing; I was using a technique using 16 well-established techniques to estimate these things.</p> <p>17 Q It was an assumption where you didn't bother 18 asking any voter how they voted or how they intended 19 to vote; correct?</p> <p>20 A I did not rely on asking voters to come up 21 with that technique.</p> <p>22 Q In fact, you can't point to any one voter and 23 tell us how they voted or intended to vote; correct?</p> <p>24 A Absolutely I can't. I don't know how any 25 individual voter voted in this race.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>108</p> <p>1 information associated with the offices and the fact 2 that they are not partisan offices. Those are factors 3 that tend to produce high undervote rates in general.</p> <p>4 Q And there is no other reason that you're aware 5 of as to what caused these undervotes?</p> <p>6 A There could be other reasons. But the two 7 that I mention to you are the two that a political 8 scientist would immediately reach to explain the high 9 undervote rates in those sets of races.</p> <p>10 Q You mention the example from 2000 of the 11 butterfly ballot as being, I think you called it the 12 paradigmatic example?</p> <p>13 A Yes.</p> <p>14 Q I'm not a big science guy, so I can't handle 15 those big words. Let me ask you this: It's your 16 understanding that in that election contest, the big 17 issue was whether the court can and should go back to 18 a pool of punch card ballots to apply -- that were 19 determined by the canvassing board to be undervotes 20 and then whether we can go back and look at those 21 ballots, apply a standard to discern voter intent, and 22 then determine whether they should be counted as legal 23 votes?</p> <p>24 A I don't recall -- I mean, I don't recall the 25 legal details of that case. But if you say -- if</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>109</p> <p>1 that's your characterization, I have no reason to</p> <p>2 doubt you.</p> <p>3 Q Can you tell me where, from the pool of</p> <p>4 undervotes, we can look at then and determine the</p> <p>5 voters' intent in this case?</p> <p>6 A In this case we cannot determine the intent of</p> <p>7 any individual voter. The exercise that I have</p> <p>8 engaged in is an attempt to estimate on average, given</p> <p>9 characteristics of voters, how those -- how that pool</p> <p>10 of voters would have cast their ballots in this</p> <p>11 particular race.</p> <p>12 Q Let me be clear. I think you said, you cannot</p> <p>13 determine how any voter voted. You can't determine</p> <p>14 the intent of any -- let me back up.</p> <p>15 Is it your testimony today that you cannot</p> <p>16 determine the intent of any voter?</p> <p>17 A I cannot determine the intent of any named</p> <p>18 voter in Sarasota County.</p> <p>19 Q I'm not asking about named voter --</p> <p>20 THE COURT: Counsel, that's the fourth time</p> <p>21 you've asked that question. Move on. He has</p> <p>22 answered it four times the same way. Move on.</p> <p>23 MR. BURHANS: Thank you, Your Honor. I will</p> <p>24 move on.</p> <p>25 BY MR. BURHANS:</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>111</p> <p>1 excess -- what percentage of the excess undervotes is</p> <p>2 attributable to this software bug that Dr. Wallach</p> <p>3 references in his report?</p> <p>4 A I have no evidence about that.</p> <p>5 Q Is there any way that you can tell the court</p> <p>6 what percentages are attributable to any of these</p> <p>7 hypotheses?</p> <p>8 A I know of, off the top of my head, no way in</p> <p>9 which you could test those. But I am not -- I am not</p> <p>10 an expert in how those bugs would manifest themselves</p> <p>11 in the voting record.</p> <p>12 Q Last question, Mr. Stewart. Can you tell this</p> <p>13 court how many legal votes that were cast for</p> <p>14 Ms. Jennings but were not counted in this election?</p> <p>15 A Can I tell them for sure? I'm sorry. Would</p> <p>16 you repeat the question.</p> <p>17 Q Yes, sir. Can you tell the court the number</p> <p>18 of legal votes cast for Christine Jennings in this</p> <p>19 election that were not counted amongst the certified</p> <p>20 returns?</p> <p>21 A Well, again, going back to my definition</p> <p>22 earlier of the way that I regard legal votes, which is</p> <p>23 not maybe, probably is not the Florida definition, and</p> <p>24 when I do my research, I rely on the certified totals</p> <p>25 of the supervisor of elections. So I have been using</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>110</p> <p>1 Q According to your analysis, I think you</p> <p>2 reached the conclusion that, if only 10 percent of the</p> <p>3 excess undervote can be attributed to machine</p> <p>4 malfunction, the result would have been for Jennings;</p> <p>5 is that correct?</p> <p>6 A That's the -- yes, on average, we would expect</p> <p>7 Jennings to prevail in that case, yes, sir.</p> <p>8 Q Can you tell the court what percentage of the</p> <p>9 excess undervote is attributable to the voter</p> <p>10 abstention or turnout hypotheses referenced in</p> <p>11 Professor Wallach's report?</p> <p>12 A I've done no work that's attempted to identify</p> <p>13 that number.</p> <p>14 Q Are you able to tell the court the number of</p> <p>15 excess undervotes attributable to the flawed ballot</p> <p>16 design theory referenced in Mr. Wallach's report?</p> <p>17 A I've done no research to try to parse out the</p> <p>18 different contributing factors to the excess</p> <p>19 undervote.</p> <p>20 Q Have you -- or can you tell the court what</p> <p>21 percentage of excess undervotes is attributable to the</p> <p>22 malicious code hypothesis put forward by Mr. Wallach</p> <p>23 in his report?</p> <p>24 A I have no data about that.</p> <p>25 Q And can you tell the court what percentage of</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>112</p> <p>1 the certified totals of the supervisor of elections.</p> <p>2 Q You would agree that the certified totals of</p> <p>3 the election contain the legal votes in this case?</p> <p>4 A I believe that the -- well they certainly</p> <p>5 reflect the legal outcome. And if they are not</p> <p>6 overturned, then she will not be elected to Congress.</p> <p>7 Q Let me circle back; I think we had a little</p> <p>8 disconnect. Earlier you said that your definition of</p> <p>9 legal vote would somehow incorporate whatever the</p> <p>10 state's definition of legal vote is; correct?</p> <p>11 A It would try to, yes, sir.</p> <p>12 Q So sitting here today with that in mind, can</p> <p>13 you tell the court the number of legal votes that were</p> <p>14 cast for Christine Jennings in this race that were not</p> <p>15 counted amongst the certified returns?</p> <p>16 MR. HIRSCH: Your Honor, I think this is asked</p> <p>17 and answered. He has gone through this multiple</p> <p>18 times.</p> <p>19 THE COURT: The question he's asking he can't</p> <p>20 answer without saying no and an explanation. He</p> <p>21 doesn't want to accept his explanation. That's why</p> <p>22 he keeps asking the same question over and over.</p> <p>23 Now, move on, counsel. The answer is, he</p> <p>24 doesn't know the 355 people who would have voted</p> <p>25 for anyone. Okay? Because that's what you're</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>1 asking.</p> <p>2 MR. BURHANS: No further questions. Thank</p> <p>3 you.</p> <p>THE COURT: Anyone else?</p> <p>CROSS EXAMINATION</p> <p>6 BY MR. LABASKY:</p> <p>7 Q Doctor, let me see if I can find 1A quickly</p> <p>8 here. In conjunction with any part of your research,</p> <p>9 did you do a survey or a demographic study or anything</p> <p>10 of that nature with respect to the total makeup of the</p> <p>11 Sarasota County voting population?</p> <p>12 A No, I did not do a survey in any systematic</p> <p>13 way.</p> <p>14 Q Do you know how many registered voters there</p> <p>15 are in Sarasota County?</p> <p>16 A Not off the top of my head, but I have that</p> <p>17 information, yes, sir.</p> <p>18 Q Do you know how many registered Democratic</p> <p>19 voters there are in Sarasota County?</p> <p>20 A Again, I don't have that information off the</p> <p>21 top of my head.</p> <p>22 Q I assume, therefore, you don't know how many</p> <p>23 registered Republicans or Independents there are. If</p> <p>24 I was to tell you that there were 76,600, give or</p> <p>25 take, registered Democrats in Sarasota County, would</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>1 here only 12 percent of the electorate was confused.</p> <p>2 A Ah, yes.</p> <p>3 Q Can you explain what you meant to say there,</p> <p>4 if that is not what you meant to say?</p> <p>5 A That is not what I meant to say. What I meant</p> <p>6 to say in that case is that in Palm Beach County we</p> <p>7 had a 5 percent confusion rate. In this case, in the</p> <p>8 case of Sarasota County, we have 12 percent of voters</p> <p>9 who are in -- you know, cast excess undervotes. But I</p> <p>10 did not mean to imply that those voters were in fact</p> <p>11 confused.</p> <p>12 Q You were searching for the explanation of</p> <p>13 those undervotes?</p> <p>14 A Exactly. That's why we're here.</p> <p>15 Q Professor, were you claiming that you believe</p> <p>16 the Florida butterfly to be more confusing or less</p> <p>17 confusing than the Sarasota County congressional</p> <p>18 ballot?</p> <p>19 A I think it is, on the face of it, a more</p> <p>20 confusing ballot than the Sarasota ballot.</p> <p>21 Q Did it warn voters that they had overvoted in</p> <p>22 Palm Beach?</p> <p>23 A No, you were not warned that you had</p> <p>24 overvoted.</p> <p>25 Q If a Gore voter unintentionally voted for a</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>1 you be willing to accept that for the sake of my next</p> <p>2 couple questions?</p> <p>3 A Yes, sir.</p> <p>4 Q Do you know what the voter turnout was in this</p> <p>5 election in Sarasota County?</p> <p>6 A As a percentage of registered -- I do not</p> <p>7 know -- I do not know the percentage, no, sir.</p> <p>8 Q Great, thank you.</p> <p>9 A I mean other than just adding this up.</p> <p>10 MR. LABASKY: No further questions.</p> <p>11 MR. ELBRECHT: No questions.</p> <p>12 MR. WINSOR: No further questions.</p> <p>13 THE COURT: Redirect?</p> <p>14 REDIRECT EXAMINATION</p> <p>15 BY MR. HIRSCH:</p> <p>16 Q Professor Stewart, directing your attention</p> <p>17 back to Exhibit 5, what is your best estimate of the</p> <p>18 number of undervotes recorded in Sarasota County that</p> <p>19 under normal circumstances would have been recorded as</p> <p>20 votes for Jennings?</p> <p>21 A The number that I estimate that would have</p> <p>22 been recorded for Jennings is 8,776.</p> <p>23 Q There was some confusion earlier I think in</p> <p>24 your direct where you may have said that the butterfly</p> <p>25 confused 5 percent of the Palm Beach electorate, and</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>1 Buchanan voter, was there a warning?</p> <p>2 A There was not.</p> <p>3 Q In the California ballot, if somebody meant to</p> <p>4 vote for a candidate and inadvertently voted for the</p> <p>5 adjacent candidate, was there any kind of warning?</p> <p>6 A No, there was not.</p> <p>7 Q Was the California ballot, in your judgment,</p> <p>8 more confusing or less confusing than the</p> <p>9 congressional ballot in Sarasota County this year?</p> <p>10 A It appears to be much more confusing.</p> <p>11 Q On what day did we ask you, Professor Stewart,</p> <p>12 to begin preparing your declaration?</p> <p>13 A I believe that was -- I will have to count</p> <p>14 back a bit.</p> <p>15 Q Approximately?</p> <p>16 A Approximately, well, see, the 20th I believe</p> <p>17 was the date that I -- that it was filed. So if it</p> <p>18 was filed on that Monday, if that was a Monday, I was</p> <p>19 asked on the preceding Thursday to begin preparing</p> <p>20 that declaration.</p> <p>21 Q Thursday the 16th?</p> <p>22 A That would be the 16th.</p> <p>23 Q And when did you complete it?</p> <p>24 A I completed it the Sunday evening of the 19th.</p> <p>25 Q And within a couple of days after that, is</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>117</p> <p>1 that when you first got the ballot image and event 2 logs?</p> <p>3 A I believe so. It was soon after, but it was after the time that I had gotten -- I did the declaration.</p> <p>6 Q Before you got those electronic logs, was the 7 most precise information you had precinct by precinct?</p> <p>8 A Yes, it was.</p> <p>9 Q And afterwards, did you have information that 10 was machine by machine and voter by voter?</p> <p>11 A Yes, I did.</p> <p>12 Q Is it your understanding that when a voter 13 comes to a polling place in Sarasota County, that 14 they're assigned to a particular machine based on 15 their age?</p> <p>16 A No.</p> <p>17 Q Or based on their gender?</p> <p>18 A I don't -- I assume they are not.</p> <p>19 Q Or based on their race?</p> <p>20 A I assume they are not.</p> <p>21 Q Or their experience as voters?</p> <p>22 A Likewise, I assume they are not.</p> <p>23 Q Or their partisanship?</p> <p>24 A I assume they are not.</p> <p>25 Q So what is the significance of having the ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>119</p> <p>1 Q What did you find?</p> <p>2 A After we controlled for the precincts 3 themselves, the factors that I had discovered remained 4 statistically significant.</p> <p>5 Q You said in your cross that 14,000 was the 6 highest number of --</p> <p>7 A It was the highest number on the graph.</p> <p>8 Q Could the number of excess undervotes have 9 exceeded 14,000?</p> <p>10 A It could have, probably not by much, but it 11 could have.</p> <p>12 Q Are you aware what Professor Herron estimates 13 it to be?</p> <p>14 A I'm aware that he estimates it to be a little 15 bit higher, but not much higher, but 14,000 plus, 16 maybe as high as 15,000, roughly the same amount.</p> <p>17 MR. HIRSCH: Excuse me one moment. May I 18 approach, Your Honor?</p> <p>19 THE COURT: Absolutely.</p> <p>20 MR. THOMAS: I do have an objection if he's 21 going to try to introduce new exhibits on redirect, 22 Your Honor. They weren't offered on direct.</p> <p>23 THE COURT: They are kind of out of order, 24 counsel.</p> <p>25 MR. HIRSCH: Your Honor, we didn't discuss ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>118</p> <p>1 information you did not have when you wrote your 2 declaration, the information that is machine by 3 machine and voter by voter, in reaching your final 4 conclusions?</p> <p>5 A Well the significance of it is that it refers 6 to the physical reality of the machines themselves. 7 When you're talking about the machine data precisely, 8 it's the machines themselves.</p> <p>9 Q Once you found the pattern exhibit on the 10 Exhibit 8B, the right-hand graph there, did that, in 11 your view, make it more likely or less likely that 12 machine malfunction had triggered at least part of the 13 high undervote rate?</p> <p>14 A That evidence made it seem to me more likely 15 that a machine malfunction triggered the excess 16 undervote.</p> <p>17 Q Did you then run equations to control for the 18 fact that different machines prepared on different 19 days were sent to different precincts?</p> <p>20 MR. THOMAS: Leading, Your Honor. It's been 21 going on for a while.</p> <p>22 THE COURT: It will take longer to argue it 23 than it will to answer the question. Go ahead.</p> <p>24 A Yes, we did.</p> <p>25 BY MR. HIRSCH: ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>120</p> <p>1 Charlotte County iVotronic ballots and how they may 2 have been confusing. That was raised for the first 3 time on cross. What I have put up is a picture of 4 the allegedly confusing page from Charlotte County. 5 So the redirect is aimed at a very specific point 6 raised in cross-examination.</p> <p>7 MR. THOMAS: Point of clarification, we would 8 have a right to recross, then, Your Honor; is that 9 correct?</p> <p>10 THE COURT: Yes, you would, on that limited 11 issue.</p> <p>12 BY MR. HIRSCH:</p> <p>13 Q Do you recognize the ballot screen in Exhibit 14 9?</p> <p>15 A Yes. This is page 3 from the Charlotte County 16 voting machine.</p> <p>17 Q And in what ways does it resemble or not 18 resemble page 2 of the Sarasota County ballot?</p> <p>19 A Well, the way in which it resembles page two 20 of Sarasota County is that it has two races, a large 21 race and a small race, on it. The way that it does 22 not resemble it, in addition obviously that the races 23 are different, is that the small race is down below, 24 and the big race is up above.</p> <p>25 Q And are you aware even roughly what the ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: right;">121</p> <p>1 undervote rates were on those two races in Charlotte 2 County on that page?</p> <p>3 A Well the undervote rate in the governor's race 4 was very, very small, was in the neighborhood of 1 5 percent. The undervote rate in attorney -- in the 6 attorney general race, as I recall, was in the mid 7 20s, say 25 percent, I believe.</p> <p>8 Q And does that set of figures indicate to you 9 that there is statistical proof showing this is about 10 voter confusion or about machine failure, or is it 11 inconclusive?</p> <p>12 A I think it's inconclusive, because there are 13 competing ways of thinking about this.</p> <p>14 Q Can you explain what you mean by that?</p> <p>15 A Well, on the one hand, I think, as you said, 16 one would point out that there are certain 17 similarities between these two ballots, and we would 18 want to attribute those similarities to the design and 19 therefore to a human factors or a voter confusion 20 explanation.</p> <p>21 At the same time, there are similarities in 22 the sense -- the obvious similarity is that these are 23 both being cast on iVotronic machines. And finally, 24 there is the -- well I will stop there. They're being 25 cast on iVotronics machines. So I don't know what the</p> <p style="text-align: right;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">123</p> <p>1 Q So turning to the excess undervote, are you 2 claiming that voter confusion caused by ballot design 3 or anything else had no impact on the excess 4 undervote?</p> <p>5 A I don't -- I don't see a reason to exclude 6 voter confusion as one of the contributing factors.</p> <p>7 Q Do you believe voter confusion could explain 8 all 14,000 of the lost votes?</p> <p>9 A I think it's unlikely that it explains all of 10 it.</p> <p>11 Q Do you believe that it's possible, based on 12 your analysis, including your analysis of ballot image 13 and event logs, that machine malfunction could explain 14 part or all of the 14,000 lost votes?</p> <p>15 A I think it could explain part of it. I think 16 it could explain part of it, yes, sir.</p> <p>17 Q Can statistics alone prove that machine 18 malfunction had no effect on the undervote rate?</p> <p>19 A Statistics alone can't parse out these things. 20 You need to look more closely at the hypothesized 21 causes.</p> <p>22 Q So it couldn't explain have no effect or total 23 effect?</p> <p>24 A It couldn't explain the total effect. What we 25 want to do is, in the case of the software malfunction</p> <p style="text-align: right;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: right;">122</p> <p>1 important thing here is.</p> <p>2 The difference is in the different candidates; 3 the similarities are in the machines.</p> <p>4 Q Are you aware of any page of the Sarasota 5 ballot that has more ballot lines than page two of the 6 Sarasota ballot or page 3 of the Charlotte ballot?</p> <p>7 A Sarasota has more lines?</p> <p>8 Q Yes.</p> <p>9 A I am not aware of that.</p> <p>10 Q Finally, let me ask you about the three causes 11 we've been discussing; I will call them voter disgust, 12 voter confusion and machine malfunction. If the 13 voters -- are you asserting that no voters were 14 disgusted with this race, and no voters intentionally 15 abstained from it?</p> <p>16 A No, I'm not asserting that at all.</p> <p>17 Q Are you -- would absentee voters who voted on 18 paper ballots likely have been impacted in a similar 19 way to those who voted electronically if the issue was 20 voter disgust?</p> <p>21 A Yes. That's what I would assume.</p> <p>22 Q Would voter disgust be built into your normal 23 undervote figure or your excess undervote figure?</p> <p>24 A It would be built into the normal undervote 25 figure.</p> <p style="text-align: right;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">124</p> <p>1 hypothesis, examine the machines and the software in 2 the same way that you would like to dig deeper into 3 the human factors in order to examine the confusion 4 hypothesis.</p> <p>5 Q What is the only way to find out, then, 6 whether machine malfunction might have changed the 7 outcome of this election, Professor --</p> <p>8 MR. THOMAS: That calls beyond the expert of 9 this witness to testify --</p> <p>10 THE COURT: I'm inclined to agree, counsel. 11 He said he was not an expert on software or 12 machines.</p> <p>13 MR. HIRSCH: He was qualified as an expert on 14 voting technology, Your Honor.</p> <p>15 THE COURT: Well that begs the question. We 16 know where you're going.</p> <p>17 MR. HIRSCH: No further questions. Thank you 18 very much.</p> <p>19 THE COURT: Cross?</p> <p>20 MR. HIRSCH: Before I sit down, Your Honor, 21 if -- this being the end of my redirect, can I move 22 the body --</p> <p>23 THE COURT: One through 9?</p> <p>24 MR. HIRSCH: One through 9.</p> <p>25 THE COURT: No objection? So received.</p> <p style="text-align: right;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>125</p> <p>1 (Exhibit Nos. 1 through 9 were marked for 2 identification and received in evidence). 3 THE COURT: Recross? 4 MR. BURHANS: No, Your Honor. 5 MR. THOMAS: Very briefly. 6 RECCROSS EXAMINATION 7 BY MR. THOMAS: 8 Q I believe you testified you were retained on 9 the 16th, filed your declaration on the 20th; is that 10 correct? 11 A I -- I agreed to start working with the 12 campaign on the Friday after the election. I agreed 13 to write the declaration on the 16th. 14 Q Oh, so you actually started work considerably 15 before you started work on your declaration? 16 A I started looking at -- preliminarily at some 17 of the analysis, yes, sir. 18 Q Okay. Now, you're not testifying today that 19 the conclusions you've put in your declaration are not 20 worth the paper they're written on because you only 21 worked on them from November 16th to November 20th; 22 are you? 23 A I'm not saying that. 24 Q We're now 29 days past November 20th, and you 25 haven't prepared any additional supplemental ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>127</p> <p>1 of any machine that was set up? 2 A Of all -- no, I did not say that. That one 3 machine contributes one observati n to the average for 4 that day. So that's the average f r that day. 5 Q But that's the lowest you get when you do the 6 one machine, isn't that what you said, that the poll 7 workers, or whoever set the machines up, were more 8 careful when they were only setting up one machine a 9 day; you ended up with a lower undervote? 10 A The average for the day, yes, sir. 11 Q But up here you have one machine set up on 12 this day on your chart, and it comes up with the 13 absolute highest average for that day. Sir, this 14 chart is absolute nonsense in terms of these two -- 15 what you're trying to show here; isn't that correct? 16 A I don't believe it's absolute nonsense, 17 because the trend there is absolutely established, it 18 seems to me, through the statistical analysis. The 19 statistical analysis was not based on looking at one 20 or two points; it was based on looking at all the 21 points together. 22 Q You were asked about the ballot in Charlotte 23 County. 24 A Yes, sir. 25 Q And you talked about the attorney general's ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>125</p> <p>1 declaration and filed it with the court; have you? 2 A I have not done that, no, sir. 3 Q I do need one point of clarification. Your 4 chart, 8B, do I understand correctly -- 5 MR. HIRSCH: Your Honor, I think this is 6 beyond the scope of redirect. 7 MR. THOMAS: I don't think so. I think he 8 talked about this chart. 9 THE COURT: You did talk about 8B. 10 MR. THOMAS: He did, Your Honor. 11 THE COURT: No, he didn't. 12 MR. THOMAS: I will move through it real 13 quick. 14 THE COURT: He didn't refer to 8B. 15 MR. THOMAS: He referred to this work being 16 done subsequent to his declaration. 17 THE COURT: Let me check some notes. Counsel 18 is correct. You did refer to 8B. 19 MR. THOMAS: Thank you, Your Honor. 20 BY MR. THOMAS: 21 Q At this point on the chart where there is 22 no -- not one of your bubbles, I believe you indicated 23 that was a day when only one machine was set up? 24 A Yes, sir. 25 Q And it had the absolute lowest undervote rate ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>128</p> <p>1 race, and you were asked about the high undervote in 2 the attorney general's race in Charlotte County. 3 A Yes, sir. 4 Q And you agreed that the undervote in that race 5 was higher than the undervote rate in Congressional 6 District 13; correct? 7 A Yes, sir. 8 Q Isn't it also true -- well actually didn't you 9 then say that the -- one of the reasons that that 10 probably happened was because they were using an 11 iVotronic machine? 12 A Well I did point out they were also using 13 iVotronics. 14 Q Yes, you did; didn't you? 15 A Yes, sir. 16 Q Did you also look at the undervote rate in the 17 attorney general's race in Lee, in Sumter County, 18 where they were not using iVotronics? 19 A I don't recall those numbers, sir. 20 Q Isn't it a fact, sir, that there was an 21 extremely high undervote rate in Lee and Sumter County 22 in the attorney general's race where the iVotronics 23 machine was not in use? 24 MR. HIRSCH: Your Honor, this question assumes 25 facts not in evidence and I think facts not ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>129</p> <p>1 correct.</p> <p>2 THE COURT: If he doesn't know, say, I don't</p> <p>3 know.</p> <p>THE WITNESS: I don't know.</p> <p>MR. THOMAS: That's all I have, Your Honor.</p> <p>6 MR. BURHANS: Nothing further, Your Honor.</p> <p>7 MR. LABASKY: Nothing further, Your Honor.</p> <p>8 MR. COFFEY: Dan Wallach is our next witness.</p> <p>9 I'm going to turn to my colleagues to see if there</p> <p>10 is any objection to the two documents, I handed</p> <p>11 copies to them earlier, one which we propose is</p> <p>12 item 10, would be a sample of what software looks</p> <p>13 like. Looks like the other is a memorandum Bates</p> <p>14 stamped by the state defendants, 0460, bearing the</p> <p>15 date of November 15th, and that would be -- any</p> <p>16 objection?</p> <p>17 MR. DeGRANDY: Yes, Your Honor. We don't have</p> <p>18 an objection as to the sample -- what did you call</p> <p>19 it?</p> <p>20 MR. COFFEY: Source code.</p> <p>21 THE COURT: Exhibit 10?</p> <p>22 MR. DeGRANDY: I do have an objection as to</p> <p>23 the e-mail. It is clearly hearsay evidence. There</p> <p>24 is no --</p> <p>25 THE COURT: I don't know what it is.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>131</p> <p>1 the document, usually when you're talking about</p> <p>2 public records exceptions, you're talking about a</p> <p>3 certificate. You're talking about proving the</p> <p>4 existence of a document within a jurisdiction or an</p> <p>5 agency.</p> <p>6 This is being introduced for the purpose of</p> <p>7 stating an opinion of the author regarding this</p> <p>8 gentleman. I have a right to cross-examine that,</p> <p>9 Your Honor. And if it's being introduced only for</p> <p>10 the purpose of showing that this existed, and Your</p> <p>11 Honor is not going to be asked to read it and</p> <p>12 consider it, that's a different issue.</p> <p>13 But the purpose of this is for these -- this</p> <p>14 individual author's opinions regarding this</p> <p>15 gentleman to be considered by the court. That's</p> <p>16 rank hearsay and totally inappropriate.</p> <p>17 MR. COFFEY: Your Honor, if they're</p> <p>18 objecting --</p> <p>19 THE COURT: Mr. Coffey, if you want it</p> <p>20 entered, call the person that wrote it.</p> <p>21 MR. COFFEY: Thank you, Judge.</p> <p>22 Thereupon,</p> <p>23 DAN SETH WALLACH</p> <p>24 was called as a witness, having been first duly sworn,</p> <p>25 was examined and testified as follows:</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>130</p> <p>1 MR. DeGRANDY: It purports to be an e-mail.</p> <p>2 And it's communication from one person to another.</p> <p>3 That is hearsay evidence. And unless they plan to</p> <p>4 bring the individual, or they plan to bring the</p> <p>5 individual who authored it, there is no need to</p> <p>6 have this. Otherwise, I can't cross examine this.</p> <p>7 THE COURT: Mr. Coffey, he has a valid point</p> <p>8 there.</p> <p>9 MR. COFFEY: Well, Your Honor, it's a public</p> <p>10 record produced by the state defendants with a</p> <p>11 Bates stamp. It appears to be a document of the</p> <p>12 State of Florida. There are a number of people</p> <p>13 whose names --</p> <p>14 THE COURT: Do you have someone to call and</p> <p>15 testify to show it is a document of the State of</p> <p>16 Florida?</p> <p>17 MR. COFFEY: Let me ask Mr. Antonacci if he</p> <p>18 will verify that item 11 is a document produced by</p> <p>19 the State of Florida as a true copy. If not, I</p> <p>20 suppose we could call one of these people who is on</p> <p>21 it, which include Dave Mann, Sue Cobb, Heidi</p> <p>2 Hughes, and others, Dawn Roberts, all whose names</p> <p>24 appear on this document. Are we going to have to</p> <p>25 go through the exercise?</p> <p>MR. DeGRANDY: Your Honor, if I may respond,</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>132</p> <p>1 DIRECT EXAMINATION</p> <p>2 BY MR. COFFEY:</p> <p>3 Q Can you state your full name for the record.</p> <p>4 A Dan Seth Wallach.</p> <p>5 Q Can you give us a rundown on your academic</p> <p>6 credentials, sir?</p> <p>7 A I earned a bachelor of science in electrical</p> <p>8 engineering and computer science from the University</p> <p>9 of California at Berkeley in 1993. I earned my</p> <p>10 master's and Ph.D. from Princeton University; the</p> <p>11 master's in '95, the Ph.D. in '98.</p> <p>12 Q And your present job?</p> <p>13 A I am an associate professor in the department</p> <p>14 of computer science at Rice University.</p> <p>15 Q And have you ever had occasion to teach</p> <p>16 courses, university level courses, on voting</p> <p>17 technology as a university professor?</p> <p>18 A Yes.</p> <p>19 Q And what are the names of -- can you describe</p> <p>20 some of those courses?</p> <p>21 A So I discuss voting in my general computer</p> <p>22 security course, and I also, this semester, co-taught</p> <p>23 a course with a political scientist and a</p> <p>24 psychologist, whose title was Voting Systems Election</p> <p>25 Administration and other related topics.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>133</p> <p>1 Q Is voting technology itself one of the</p> <p>2 subjects upon which you provide instruction at the</p> <p>3 university level?</p> <p>4 A Yes, it is.</p> <p>5 Q And in addition to your functions and</p> <p>6 responsibilities as a member of the faculty, have you</p> <p>7 also had an occasion to provide advice and scientific</p> <p>8 analysis to any of the nation's boards that have</p> <p>9 responsibility with respect to election technology?</p> <p>10 A Yes, I have.</p> <p>11 Q Can you give Judge Gary some examples of that?</p> <p>12 A So I testified in front of a board called the</p> <p>13 Technical Guidelines Development Committee, which was</p> <p>14 vetted by Congress as part of the Help America Vote</p> <p>15 Act in 2002 to help draft new standards for voting</p> <p>16 systems.</p> <p>17 I also spoke informally on the telephone and</p> <p>18 via e-mail with employees of NIST, the National</p> <p>19 Institute of Standards in Technology, who are</p> <p>20 responsible for drafting those standards.</p> <p>21 Q What is the Carter-Baker Commission on Federal</p> <p>22 Election Reform?</p> <p>23 A This refers to former president Jimmy Carter</p> <p>24 and former secretary of state James Baker, III, who</p> <p>25 together formed a panel also to consider issues in our</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>135</p> <p>1 human factors of voting system.</p> <p>2 Q How does the size and importance of this grant</p> <p>3 compare to other grants given to academic groups with</p> <p>4 respect to voting technology?</p> <p>5 A There are three main forms of national science</p> <p>6 foundation grants, and this is a research center,</p> <p>7 which is the largest form of grant that they offer.</p> <p>8 Q And did the national science foundation, in</p> <p>9 providing this grant, approve you as either the</p> <p>10 assistant director or as a principal investigator?</p> <p>11 A Yes, they did.</p> <p>12 Q And have you published any research papers in</p> <p>13 connection with electronic voting security issues?</p> <p>14 A Yes, I have.</p> <p>15 Q And can you -- in the course of any of those</p> <p>16 publications, have you ever actually had the occasion</p> <p>17 to review source code for electronic voting computer</p> <p>18 software?</p> <p>19 A Yes, I have.</p> <p>20 Q And which paper was that?</p> <p>21 A This was an analysis of an electronic voting</p> <p>22 system that I produced in co-authorship with Avi</p> <p>23 Rubin, Adam Stubblefield and Tadayoshi Kohno.</p> <p>24 Q In connection with the Diebold paper, did it</p> <p>25 have an impact to your knowledge, or --</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>134</p> <p>1 nation's election technology and administration and to</p> <p>2 make recommendations for improvements on those.</p> <p>3 Q Did you have any role with respect to their</p> <p>4 work?</p> <p>5 A Yes. I was an advisor, and I testified in</p> <p>6 front of them.</p> <p>7 Q And what is the Brennan Centers Voting Systems</p> <p>8 Security Task Force?</p> <p>9 A The Brennan Center is an organization</p> <p>10 affiliated with New York University, and they were</p> <p>11 similarly conducting a study where they considered a</p> <p>12 number of expert opinions and produced recommendations</p> <p>13 for how better to test an audit and consider the</p> <p>14 security of electronic voting systems.</p> <p>15 Q And have you provided any analysis or advice</p> <p>16 to the Brennan Center Voting Systems Security Task</p> <p>17 Force?</p> <p>18 A Yes, I have.</p> <p>19 Q And what is ACCURATE?</p> <p>20 A ACCURATE is a national science foundation</p> <p>21 funded research center, of which I am the associate</p> <p>22 director, and we have principal investigators at Johns</p> <p>23 Hopkins, Rice University, Stanford, Berkeley and the</p> <p>24 University of Iowa. Collectively what we are working</p> <p>25 on is improvements to the technology and policy and</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>136</p> <p>1 A As a direct result of the paper we wrote, the</p> <p>2 states of Maryland, Ohio and California commissioned</p> <p>3 their own studies --</p> <p>4 MR. DeGRANDY: Objection, Your Honor. I don't</p> <p>5 know how this witness can know that or testify what</p> <p>6 is in the minds of the elected appointed officials</p> <p>7 of those states.</p> <p>8 MR. COFFEY: Your Honor, if I may briefly</p> <p>9 respond. He's a scientist and an academic, and</p> <p>10 experts are not required to have firsthand, direct</p> <p>11 knowledge of everything they testify about. But</p> <p>12 it's certainly relevant to an expert's work to know</p> <p>13 what impact they're having and to be in touch with</p> <p>14 election agencies. That's the main function --</p> <p>15 THE COURT: I thought you were trying to</p> <p>16 qualify him as an expert, Mr. Coffey.</p> <p>17 MR. COFFEY: I am.</p> <p>18 THE COURT: Let's do it and move on. Time's</p> <p>19 awastin' here this afternoon.</p> <p>20 BY MR. COFFEY:</p> <p>21 Q In connection with the Diebold paper, did --</p> <p>22 had you signed any nondisclosure agreements?</p> <p>23 A No, I did not.</p> <p>24 Q Were there any confidentiality orders or</p> <p>25 anything like that in place with respect to the</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>1 Diebold research paper?</p> <p>2 A No, there were n t.</p> <p>3 Q And have you had occasion to ever testify as an expert witness in, for example, judicial proceedings?</p> <p>6 A Yes, I have.</p> <p>7 Q Have you ever had occasion to testify in the area of computer software technology?</p> <p>8 A Yes, I have.</p> <p>9 Q Can you give us an idea of whether -- of how many times you've been retained as an expert in computer software issues?</p> <p>10 A I have been retained as an expert in six voting cases prior to this one. I've also been retained as an expert in two patent cases and one trade secret case.</p> <p>11 Q In the course of your work as an expert in either patent cases or voting technology cases, have you ever had occasion to enter into nondisclosure or confidentiality agreements?</p> <p>12 A Yes, I have.</p> <p>13 Q And are you familiar with, in a general way, how they work?</p> <p>14 A Yes, I am.</p> <p>15 Q And you understand the seriousness of strict</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>1 technology?</p> <p>2 A Yes, I have.</p> <p>3 Q And is this the same field in which you teach university level courses?</p> <p>4 A Yes, it is.</p> <p>5 Q Same field in which you've written scholarly reports?</p> <p>6 A Yes, it is.</p> <p>7 Q Same field in which you've provided scientific analysis to national study groups like the Carter-Baker Commission?</p> <p>8 A Yes, it is.</p> <p>9 Q Is it the same field in which you've been qualified as an expert by four, five, six different courts?</p> <p>10 A Yes, it is.</p> <p>11 MR. COFFEY: Your Honor, we would tender Professor Wallach as an expert on the subject of electronic voting technology.</p> <p>12 THE COURT: Any objection?</p> <p>13 MR. DeGRANDY: No objection.</p> <p>14 MR. BURHANS: No objection.</p> <p>15 (All respond, no objection).</p> <p>16 THE COURT: So received.</p> <p>17 MR. COFFEY: Thank you, Judge.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>1 and complete compliance with the confidentiality agreement, or even with more particularly, with a court order?</p> <p>2 A Of course.</p> <p>3 Q And in any of the cases you've been involved with, were there confidentiality agreements with respect to software that was considered very valuable, highly sensitive and very closely guarded?</p> <p>4 A Yes, there were.</p> <p>5 Q Can you give us just an example?</p> <p>6 A In one particular case, Unilock vs. Microsoft, which concerned alleged patent infringement, I was given access to Microsoft source code that is considered so sensitive that only a handful of employees within Microsoft are given access to that code.</p> <p>7 Q With any of the confidentiality agreements that you have entered into agreement, has anyone ever had to go to any judge to suggest that you're not complying or to force your compliance with the very strict and detailed strictures of a confidentiality agreement?</p> <p>8 A Something like that has never occurred.</p> <p>9 Q And have you been engaged to provide services for Chrs Jennings in the field of electronic voting</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>1 BY MR. COFFEY:</p> <p>2 Q Professor Wallach, did you come in the courtroom today ready to tell Judge Gary exactly what went wrong with the electronic voting technology in Sarasota County on November 7th?</p> <p>3 A No, I did not.</p> <p>4 Q Have you reviewed the complaint, the plaintiff's complaint?</p> <p>5 A Yes, I have.</p> <p>6 Q And you identified in your declaration possible areas, such as things we've talked about, voter confusion, voter abstention. What is it that you have been asked to investigate on behalf of Chris Jennings?</p> <p>7 A I have been asked to investigate whether there was some kind of software bug or malfunction.</p> <p>8 Q In your opinion, can the plaintiff's position concerning machine malfunction be proven or disproven within what you would consider to be a reasonable degree of professional certainty?</p> <p>9 A Yes.</p> <p>10 Q Have you ever found a bug in computer software before, by the way?</p> <p>11 A Yes. I d it all the time.</p> <p>12 Q Is finding a computer bug in software</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>141</p> <p>1 something that you consider to be part of your 2 professional skill set?</p> <p>3 A Yes.</p> <p>4 Q Now, as part of this assignment, would you 5 rest your opinion as a computer scientist solely on 6 voter affidavits without doing the testing that is -- 7 that you would consider to be necessary of the 8 underlying election hardware and software?</p> <p>9 A Voter affidavits are a place to begin, but 10 they're only a beginning.</p> <p>11 Q What are some of the elements that you would 12 consider to be necessary for an investigation of 13 alleged malfunction in computerized election 14 technology?</p> <p>15 A For starters, it would be necessary to have 16 the software and the hardware.</p> <p>17 Q Okay. And just to sort of break that down a 18 little bit. To conduct an investigation along the 19 lines of what we're talking about, you've referred to 20 election hardware. Can you give us some examples of 21 the actual hardware components that you're referring 22 to for Judge Gary, frankly, for me.</p> <p>23 A Okay. Well there is the iVotronic voting 24 machine.</p> <p>25 Q Let's stop there. Can you just, general ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>143</p> <p>1 A Yes.</p> <p>2 Q Now let me ask you, what is a personalized 3 electronic ballot?</p> <p>4 A Personalized electronic ballot, or PEB, is a 5 red plastic box about four inches by three inches, 6 roughly, which contains a small computer, a battery 7 and an infrared system that is used -- that 8 communicates with the iVotronic in a fashion 9 comparable to the way your TV remote control 10 communicates with your TV.</p> <p>11 And it is used to enable the iVotronic to 12 accept a vote from a voter, among other things.</p> <p>13 Q Does it include any embedded software in the 14 so-called PEB itself?</p> <p>15 A Yes. The PEB itself is a computer. And as 16 such, it has all the things other computers have, 17 including software.</p> <p>18 Q What is the communications pack, in terms of 19 the inventory of hardware that we're talking about 20 today?</p> <p>21 A A communications pack has a modem, and it has 22 a printer. And this is used, among other things, to 23 print results from a voting machine, to print zero 24 tapes, et cetera.</p> <p>25 Q And what is the PEB reader? ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>142</p> <p>1 terms, describe that for Judge Gary, what that machine 2 itself might look like or appear to be like to a 3 voter.</p> <p>4 A Okay. An iVotronic machine, the ones used in 5 Sarasota County have a 12-inch screen, which is touch 6 sensitive. It's embedded in a fairly hefty plastic 7 box that has a computer and batteries and associated 8 parts within it.</p> <p>9 Q Is it flat? Is it vertical? At an angle?</p> <p>10 A In typical use, it's approximately flat to 11 the, you know, with the floor. But it's at desk 12 height.</p> <p>13 Q And just to sort of shorten things, what the 14 voter would see looking down at this desktop, is that 15 something like some of the pages we were showing Judge 16 Gary earlier? Let me see if I can find a good 17 example. Well if I may, we will just use this one. 18 It's the so-called Charlotte County thing. Is this 19 what the page itself would look like to a voter?</p> <p>20 A Yes.</p> <p>21 Q And in your judgment would you need to 22 actually examine these machines in order to be able to 23 prove or disprove the plaintiff's contention the 24 machine malfunctioned within a reasonable degree of 25 professional certainty? ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>144</p> <p>1 A A PEB reader is a connecting device that 2 allows a PEB to be interfaced with a regular computer.</p> <p>3 Q Now, with respect to the personalized 4 electronic ballots, the PEBs, the communications pack 5 and the PEB reader, where do you understand that those 6 hardware components are presently located?</p> <p>7 A In a warehouse in Sarasota County.</p> <p>8 Q And are all of those needed, in your 9 professional judgment, in order to disprove or prove 10 the plaintiff's claim of machine malfunction?</p> <p>11 A Yes.</p> <p>12 Q What is -- what do we refer to with respect 13 here, what do we mean with the firmware and software 14 mounted on the iVotronic machines; what is that?</p> <p>15 A The terms "firmware" and "software" are 16 approximately synonymous, so I will use them -- it's 17 not worth distinguishing between them today.</p> <p>18 Q Okay.</p> <p>19 A The software are the instructions that tell a 20 computer how to operate. Software embodies all of the 21 logic, all of the reasoning, everything about how the 22 computer operates.</p> <p>23 Q And where would these be located?</p> <p>24 A Software is stored inside the machine in 25 what's sometimes called binary or object form. And ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>145</p> <p>1 then there are source code, which I imagine we will be 2 talking about in just a minute. 3 Q And that would be located where, as far as you know? A As far as I know, source code is held in 6 escrow -- 7 Q Not source code, the software mounted on the 8 iVotronic machines. 9 A I'm sorry. The software is stored on a chip 10 inside the iVotronic machine. 11 Q Which would be where? 12 A In Sarasota County. 13 Q And all the files located onto an iVotronic 14 machine as part of the ballot programming process, 15 could you explain to Judge Gary what that is? 16 A Every iVotronic machine, when it emerges from 17 the factory, doesn't know anything about a particular 18 race that it might be used on. When the county 19 configures the machines for a particular race, they 20 load what is sometimes called a ballot definition 21 file. It's the configuration that says what the races 22 are on every page, as we've seen. That information 23 would be necessary in order for us to consider how the 24 software responded to -- on election day. 25 Q With respect to sort of loading the ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>147</p> <p>1 opinion, to conduct this process of proving or 2 disproving machine error? 3 A Yes. 4 Q What about user manuals, operating images, 5 training materials with respect to the maintenance of 6 the various iVotronic systems and its various 7 components? 8 A Yes. The manuals would be necessary to gain 9 an understanding how the parts work together. 10 Q Where are those materials located, to your 11 knowledge? 12 A I believe that the county has copies of all of 13 that. 14 Q And what about materials necessary to extract 15 and read the three redundant memories contained within 16 the iVotronic machines? 17 A Yeah. 18 Q Where would that be located? 19 A The county should have those materials. 20 Q Okay. And are these components also, in your 21 professional judgment, necessary to this process, 22 proving or disproving the plaintiff's allegations? 23 A Yes. The three redundant memories are 24 supposed to contain identical copies of the votes. 25 And if for some reason they don't, it would be ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>146</p> <p>1 election-specific software into the embedded software 2 in the iVotronic, who does that, by the way? 3 A I wouldn't call it -- it's called 4 election-specific definition files. 5 Q Okay. 6 A Those are loaded onto the machines by county 7 personnel. 8 Q And where would those files be located today? 9 A Physically inside the machines, as well as 10 there would be copies on the computer servers that are 11 owned by the county. 12 Q Okay. Materials pertaining to development 13 tools and scripts and other software used in November 14 2006 to compile, debug and test various hardware 15 components, including Unity software, is that 16 something that is also -- where is that located? 17 A The county would be unlikely to have that. 18 The state should have it. And if the state doesn't 19 have it, the vendor certainly does. 20 Q Okay. With respect to the items we've just 21 described, the firmware and the software and the 22 iVotronic machines, the files located onto the 23 iVotronic machine, and the materials pertaining to 24 things like development tools, as well as debugging 25 the system, are those components needed, in your ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>148</p> <p>1 interesting to determine how they differed and why. 2 Q What are three redundant memories? What does 3 that mean? 4 A The voting machines from ES&S are engineered 5 to have a certain amount of resistance to hardware 6 faults. So by storing the vote records on three 7 separate chips, if one of them experiences a failure, 8 then you might be able to extract the votes from one 9 of the other chips. 10 Q Now, what is source code? What does that 11 mean? 12 A Source code is the medium in which software 13 engineers develop software. There are programming 14 languages such as CEC Plus Plus Java and a number of 15 others in which programmers write, edit, test, debug 16 their software. 17 MR. COFFEY: Now, with reference to, Your 18 Honor, what I think is not objected to, is Exhibit 19 10. And with apologies, I was going to ask if I 20 could hand it up to the court and hand a copy to 21 Professor Wallach, and Your Honor may be able to 22 see it from there. 23 THE COURT: That's fine. 24 (Exhibit No. 10 was identified for the 25 record). ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>1 MR. COFFEY: Because we made so many copies, 2 I'm going to hand up another one, so there is 3 plenty. 4 THE WITNESS: Thank you. 5 BY MR. COFFEY: 6 Q Is exhibit -- what is Exhibit 10? 7 A Exhibit 10 is a simple example of a software 8 program, in this case, designed tally votes for three 9 candidates; Alice, Bob, and Charlie. It's input as A, 10 B and C, and it produces totals and -- 11 Q Go ahead. 12 A I was going to say, this particular example 13 program has a small bug in it that would result in the 14 wrong tally. 15 Q Let's start out with this question. If I were 16 to examine the, quote, entire source code for a 17 software program, would it, in a sense, be a whole lot 18 of pages just like this? 19 A Yes, it would. 20 Q Okay. And by looking at this particular page, 21 as a computer scientist, can you make sense of it? 22 A Yes, I can. 23 Q And as a computer scientist looking at this 24 particular page, is there anything that suggests to 25 you a defect that could, in effect, cause a, quote, ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>149 1 happen? 2 A In this case, every single vote would be 3 counted for the candidate to whom it was properly 4 attributed, and additionally it would be counted 5 towards Charlie. 6 Q Now, do you consider that the source code to 7 the Ivotronic system and the -- and to the tabulation 8 and the PEB reader -- I'm sorry, the PEB are necessary 9 for you to conduct your investigation to prove or 10 disprove the allegation of machine malfunction? 11 A Yes. 12 Q Why is that? 13 A Without -- without the source code, it's -- it 14 would be -- it would be very difficult for me -- 15 difficult or impossible for me to determine how the 16 software would behave. What source code allows you to 17 do is see not only how the software behaves in a 18 common case, but to consider uncommon cases, to 19 consider a variety of different things. 20 And I imagine we will talk about different 21 hypotheses later today. 22 Q Well can you, by just testing the machines, 23 can you conclusively eliminate the prospect of a 24 software bug? 25 A Testing can never eliminate the possibility of ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>150 1 computer bug or software bug? 2 A Yes. 3 Q Can you explain? 4 A So this particular example actually 5 demonstrates a common mistake that many C programmers 6 make, which is the confusion of a single equals with a 7 double equals. Both result in programs that will 8 operate, but one will behave very differently from the 9 other. 10 Q Can you just show us or indicate where on the 11 page the wrong single equals is? 12 A There is a line that says, if a vote equals, 13 and then the letter C in quotation marks. 14 Q Okay. 15 A And you will observe that there is a single 16 equals rather than a double equals. So rather than 17 comparing to the letter C, it actually sets it to the 18 letter C, and will therefore, the comparison will 19 always be true. 20 Q So if somebody has -- I'm looking at this 21 about two-thirds down the page, where it says, vote 22 equals C. If somebody had put a double equals, 23 everything would be fine? 24 A In this particular example, yes. 25 Q And by putting a single equals, what could ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>152 1 bugs. 2 Q Now, we just talked a little bit about 3 theories. Are there some particular theories that you 4 would attempt to test by studying the source code? 5 A Yes, there are several theories. 6 Q Can you give Judge Gary some examples. 7 A So, one theory would be that there was a 8 malfunction between when the voter touched the screen 9 and when a particular candidate was selected. To 10 study that theory I would look at the code responsible 11 for interpreting touches on the screen. 12 Q So if I may just interrupt, would that mean 13 you have to look at every page of source code, let's 14 say it's 800 pages, from page one from A to Z to look 15 at that, to focus on that possible theory? 16 A I would probably not need to look at every 17 page. I would probably be able to quickly ascertain 18 the section of the software that was responsible for 19 dealing with touches on the screen. I imagine it 20 would be much smaller than the entirety of the 21 program. 22 Q What do we mean when we refer to the volatile 23 memory of a computer? 24 A So that refers to a computer's RAM, which 25 is -- ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>1 Q RAM stands for?</p> <p>2 A Random access memory.</p> <p>3 Q Okay.</p> <p>4 A Which means memory in the computer that can</p> <p>5 store various states about how the computation is</p> <p>6 proceeding, but when the power goes off, the RAM loses</p> <p>7 its contents.</p> <p>8 Q Okay. If one of us did not speak computerese,</p> <p>9 and we looked for an everyday word for volatile</p> <p>10 memory, would "temporary" work?</p> <p>11 A "Temporary" is a reasonable term.</p> <p>12 Q Okay. What, then, is the non-volatile memory</p> <p>13 of a computer?</p> <p>14 A That refers to permanent storage, where data</p> <p>15 written to the non-volatile memory, whether that means</p> <p>16 flash memory or hard disk or some other medium, will</p> <p>17 survive power being removed from the machine.</p> <p>18 Q Would access to the source code enable you to</p> <p>19 study the adequacy of the connection between volatile</p> <p>20 memory, which I think you describe as temporary, and</p> <p>21 non-volatile, being the permanent memory of the</p> <p>22 computer system?</p> <p>23 A Yes, it would.</p> <p>24 Q And is that something that would take you --</p> <p>25 again, you would have to read every page and spend</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>153</p> <p>1 A What I might find is that -- is that a</p> <p>2 programmer never anticipated so many things on the</p> <p>3 page at once. And I might see software that -- I</p> <p>4 might see software that, when you give it the</p> <p>5 particular input, that it begins to misbehave.</p> <p>6 Q Did you -- you were here in the courtroom when</p> <p>7 Professor Stewart talked about some of his findings</p> <p>8 earlier today; correct?</p> <p>9 A Yes.</p> <p>10 Q And you recall the nature of some of his</p> <p>11 findings with respect to the particular days machines</p> <p>12 were prepared and the number of machines prepared on a</p> <p>13 particular date; do you recall that?</p> <p>14 A Yes.</p> <p>15 Q Do those findings suggest -- create clues or</p> <p>16 leads that a computer scientist might try to pursue by</p> <p>17 examining source code?</p> <p>18 A Absolutely.</p> <p>19 Q Can you explain?</p> <p>20 A Dr. Stewart's findings are suggestive that</p> <p>21 something in the control of the county worker who sets</p> <p>22 up a machine might have an impact on the undervote</p> <p>23 rate. And to my mind the thing that a county worker</p> <p>24 has the most control over is the calibration of the</p> <p>25 screen. So that would lead me to consider how</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>154</p> <p>1 years to get to the bottom of?</p> <p>2 A I imagine it would be something that I could</p> <p>3 study very quickly. There would be a portion of the</p> <p>4 program that's responsible for storing votes once</p> <p>5 they're complete. And I imagine that it would be</p> <p>6 relatively easy to identify the appropriate portion of</p> <p>7 the software.</p> <p>8 Q Are there any other theories that you believe</p> <p>9 could be either validated or eliminated by examination</p> <p>10 of source code? And we're all referring to theories</p> <p>11 of machine malfunction here.</p> <p>12 A Sure. So another -- another possible theory</p> <p>13 might be that something about the calibration of the</p> <p>14 machine would affect its behavior. And to validate</p> <p>15 that theory I would look at the source code</p> <p>16 responsible for machine calibration. Similarly, there</p> <p>17 might be something about the ballot definition that</p> <p>18 causes the machine to misbehave in this particular</p> <p>19 instance.</p> <p>20 And I would look at the software responsible</p> <p>21 for reading it and processing the ballot definition.</p> <p>22 Q Would there be anything in the source code</p> <p>23 that would tell you, for example, whether loading nine</p> <p>24 candidate names on a ballot increases the likelihood</p> <p>25 of ticking a software bug?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>155</p> <p>1 poorly-calibrated screens might impact the undervote</p> <p>2 rate.</p> <p>3 Q Now, does the process of this investigation</p> <p>4 also include access to the machines themselves for</p> <p>5 testing purposes?</p> <p>6 A Yes.</p> <p>7 Q Can you explain how the machine testing</p> <p>8 process would interact with the source code analysis</p> <p>9 that you describe?</p> <p>10 A In the process of examining the source code, I</p> <p>11 might determine that a particular set of conditions</p> <p>12 might cause the undervote to be observed. I would</p> <p>13 naturally want to try that out on a machine to see if</p> <p>14 it actually worked. And likewise, through testing and</p> <p>15 examination of machines, I might observe something</p> <p>16 unusual, and then I might go back and look at the</p> <p>17 software to see if I can find an explanation for why.</p> <p>18 Q Do software bugs repeat themselves in exactly</p> <p>19 the same way, based on exactly the same screen presses</p> <p>20 every single time?</p> <p>21 A The answer varies. Some software bugs are</p> <p>22 repeatable, and others aren't.</p> <p>23 Q What does the term "deterministic" mean in</p> <p>24 connection with software bugs?</p> <p>25 A The term of art that computer scientists use</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>157</p> <p>1 is a bug is deterministic or non-deterministic, which</p> <p>2 refers to whether the software behaves the same way</p> <p>3 every time or whether the software behavior differs</p> <p>4 every time.</p> <p>5 Q And what is -- what does it mean to have a</p> <p>6 non-deterministic bug in a voting machine?</p> <p>7 A It could mean that the machine behaves</p> <p>8 properly under many circumstances, but misbehaves</p> <p>9 under some circumstances, or under the same</p> <p>10 circumstances, it might behave properly sometimes and</p> <p>11 behave improperly other times.</p> <p>12 Q Now, I believe you were here in the courtroom</p> <p>13 when Mr. Buchanan's attorney referred to whether the</p> <p>14 same 12 percent excess undervotes might occur in every</p> <p>15 vote. Would that kind of scenario be repeated</p> <p>16 consistently with a non-deterministic bug?</p> <p>17 A It's hard to say.</p> <p>18 Q Would a non-deterministic bug occur 80 percent</p> <p>19 of the time, 30 percent of the time, 5 percent of the</p> <p>20 time?</p> <p>21 A It's impossible to say without examining the</p> <p>22 particular code in question.</p> <p>23 Q What -- does computer science mean -- could,</p> <p>24 for example, under computer science, a</p> <p>25 non-deterministic bug occur 15 percent of the time or</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>159</p> <p>1 Q Now, you've talked about your opinion, your</p> <p>2 professional opinion, that you need a whole lot of</p> <p>3 hardware components, including machines, the personal</p> <p>4 ballots, communications packs, a range of things,</p> <p>5 operator manuals, the source codes, in order to prove</p> <p>6 or disprove the theory.</p> <p>7 How long, in your professional judgment, would</p> <p>8 it take to reach a reasonable degree of professional</p> <p>9 certainty? Are we talking two years? Are we talking</p> <p>10 six months?</p> <p>11 A Without having seen the exact source code,</p> <p>12 it's difficult for me to make an estimate. However,</p> <p>13 the Diebold source code that we analyzed and produced</p> <p>14 a report on, the analysis phase consumed approximately</p> <p>15 two weeks of time by four people.</p> <p>16 Q And assuming that the hardware were being</p> <p>17 examined at the same time, including the eight</p> <p>18 machines your client has requested, presumably eight,</p> <p>19 if the other side were to look at them, whatever that</p> <p>20 number is, could that be done side by side within the</p> <p>21 same time frame?</p> <p>22 A Yes.</p> <p>23 Q In your opinion, without an examination of the</p> <p>24 source code in this machine components, will computer</p> <p>25 science enable a reasonable -- within a reasonable</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>158</p> <p>1 12 percent of the time?</p> <p>2 A It's certainly plausible.</p> <p>3 Q Is that something that you believe you would</p> <p>4 be able to examine and prove or disprove with access</p> <p>5 to the source code?</p> <p>6 A Yes, it is.</p> <p>7 Q Are you familiar of a study done in California</p> <p>8 with respect to 96 machines in the so-called sliding</p> <p>9 bug report?</p> <p>10 A Yes, I am.</p> <p>11 Q And out of the 96 machines that were tested,</p> <p>12 do you recall how many actually crashed or how many</p> <p>13 crashes they were able to produce?</p> <p>14 A I recall that they were able to crash 20 out</p> <p>15 of the 96 machines in that particular study.</p> <p>16 Q As we go through this definitional discussion</p> <p>17 of deterministic versus non-deterministic, if you're</p> <p>18 able to duplicate a crash in 20 out of 92 machines --</p> <p>19 I think it was 92 -- which is that? Is that</p> <p>20 deterministic or non-deterministic?</p> <p>21 A Well this particular bug had to do with the</p> <p>22 peculiarities of user behavior. And then, depending</p> <p>23 on whether the user dragged their finger in a</p> <p>24 particular fashion on the screen, the software would</p> <p>25 possibly or possibly not crash immediately thereafter.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>160</p> <p>1 degree of professional certainty, the Jennings</p> <p>2 allegation of machine malfunction to be sufficiently</p> <p>3 proven or sufficiently disproven?</p> <p>4 A Without source code we would be unable to rule</p> <p>5 out the software bug hypothesis.</p> <p>6 MR. COFFEY: Bear with me one second. Your</p> <p>7 Honor, we are within five minutes of concluding the</p> <p>8 direct, so we will be able to get done by 5:00 if</p> <p>9 that works.</p> <p>10 BY MR. COFFEY:</p> <p>11 Q Professor Wallach, there was an allegation</p> <p>12 made before Judge Gary about experts who make a living</p> <p>13 on the lecture circuit addressing electronic voting</p> <p>14 systems. Do you make a living on the lecture circuit?</p> <p>15 MR. DeGRANDY: Your Honor, let me object. I</p> <p>16 have not seen -- I've seen the two transcripts so</p> <p>17 far before Your Honor. I have not seen that</p> <p>18 allegation.</p> <p>19 THE COURT: I don't agree with that allegation</p> <p>20 either, Mr. Coffey.</p> <p>21 MR. DeGRANDY: If so, we should name the</p> <p>22 person and the hearing in which it occurred and see</p> <p>23 what's relevant about it.</p> <p>24 MR. COFFEY: Sure. Does Harry remember say at</p> <p>25 page 40 on December 8th? If they're willing to</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>161</p> <p>1 back off on that, I'm fine, Judge.</p> <p>2 THE COURT: Why don't you ask him how he makes</p> <p>3 his living instead of leading him.</p> <p>BY MR. COFFEY:</p> <p>4 Q Do you make a living on the lecture circuit --</p> <p>5 THE COURT: That's leading, Mr. Coffey. Ask</p> <p>6 him how he makes a living.</p> <p>7 How do you make a living, sir?</p> <p>8 THE WITNESS: I make a living as a professor</p> <p>9 teaching at a university.</p> <p>10 THE COURT: Do you do any lecturing?</p> <p>11 THE WITNESS: I do some.</p> <p>12 THE COURT: What percentage of the time do you</p> <p>13 lecture?</p> <p>14 THE WITNESS: I give a number of talks every</p> <p>15 year.</p> <p>16 THE COURT: How many, approximately?</p> <p>17 THE WITNESS: Sometimes one or two a month.</p> <p>18 THE COURT: Okay.</p> <p>20 BY MR. COFFEY:</p> <p>21 Q And how much do you make; is it 100,000; is it</p> <p>22 50,000, on all your lecturing?</p> <p>23 A If I'm lucky, I make a couple hundred bucks on</p> <p>24 honorariums.</p> <p>25 Q Do you sell election machines or election</p> <p>ACCURATE STENOGRAPH REPORTERS, INC.</p>	<p>163</p> <p>1 A Yes, I do.</p> <p>2 Q And do you know that -- you know what</p> <p>3 declaring under penalty of perjury means?</p> <p>4 A Yes, I do.</p> <p>5 Q Is there any doubt in your mind as to whether</p> <p>6 you can and will comply to the letter with any</p> <p>7 protective order that is entered by Judge Gary?</p> <p>8 A There is no doubt.</p> <p>9 MR. COFFEY: Nothing further, Judge.</p> <p>10 THE COURT: Mr. Finley, do you have any</p> <p>11 questions?</p> <p>12 MR. FINLEY: Your Honor, my cocounsel, Matt</p> <p>13 Zimmerman, will be doing direct for us. But I</p> <p>14 believe he has --</p> <p>15 THE COURT: No, you're on cross, because this</p> <p>16 is not your witness.</p> <p>17 MR. FINLEY: I'm sorry. In terms of</p> <p>18 nomenclature, because we had been in that order</p> <p>19 before, I thought the court was treating it as</p> <p>20 direct. But we do have some questions, which</p> <p>21 is approximately 15 minutes.</p> <p>22 THE COURT: Go for it.</p> <p>CROSS EXAMINATION</p> <p>24 BY MR. ZIMMERMAN:</p> <p>25 Q Professor Wallach, just to be clear, you are</p> <p>ACCURATE STENOGRAPH REPORTERS, INC.</p>
<p>162</p> <p>1 software on the open marketplace or anywhere else?</p> <p>2 A No, I do not.</p> <p>3 Q Do you produce any software for sale?</p> <p>4 A No, I do not.</p> <p>5 Q Now, Professor Wallach, we talked a little</p> <p>6 earlier about a confidentiality agreement and a</p> <p>7 confidentiality order. I want to read you the</p> <p>8 following language and ask you if there is anything</p> <p>9 about it that you don't understand.</p> <p>10 I will not disclose defendant ES&S's trade</p> <p>11 secrets to anyone, other than persons specifically</p> <p>12 authorized by the order, and agree to return all such</p> <p>13 materials that come into my possession to counsel from</p> <p>14 whom I received such materials.</p> <p>15 Anything confusing about that?</p> <p>16 A That's very clear.</p> <p>17 Q If that order is entered, are you going to</p> <p>18 obey that?</p> <p>19 A Yes, I shall.</p> <p>20 Q And the other thing I want to ask you about is</p> <p>21 a statement that says that you would be subject to the</p> <p>personal jurisdiction of the circuit court with</p> <p>respect to any enforcement of the order, including any</p> <p>proceeding relating to contempt of court. Do you know</p> <p>24 what contempt of court is?</p> <p>ACCURATE STENOGRAPH REPORTERS, INC.</p>	<p>164</p> <p>1 not employed by the Fedder plaintiffs in this case; is</p> <p>2 that correct?</p> <p>3 A That's correct.</p> <p>4 Q You previously testified regarding your</p> <p>5 familiarity with voting systems and the process by</p> <p>6 which they are purchased; is that correct?</p> <p>7 A Yes.</p> <p>8 Q Are you familiar -- are you familiar with the</p> <p>9 process by which voting equipment receives federal</p> <p>10 qualification?</p> <p>11 A Yes, I am.</p> <p>12 Q Are you familiar with the term, ITA, as it</p> <p>13 refers to voting equipment?</p> <p>14 A Yes.</p> <p>15 Q Can you describe for the court what ITA stands</p> <p>16 for?</p> <p>17 A That stands for independent testing authority.</p> <p>18 These are companies which enter into agreements with</p> <p>19 the voting system vendors to study whether they meet</p> <p>20 the federal standards --</p> <p>21 MR. DeGRANDY: Your Honor, if Your Honor has</p> <p>22 deemed this to be cross, this is clearly outside</p> <p>23 the scope of direct.</p> <p>24 THE COURT: It is a little outside the scope</p> <p>25 of direct.</p> <p>ACCURATE STENOGRAPH REPORTERS, INC.</p>

<p>165</p> <p>1 MR. ZIMMERMAN: I will try to narrow it, Your</p> <p>2 Honor.</p> <p>3 THE COURT: Sure.</p> <p>4 BY MR. ZIMMERMAN:</p> <p>5 Q Professor Wallach, are you familiar when the</p> <p>6 iVotronic voting systems were purchased for use in</p> <p>7 Florida -- excuse me, in Sarasota County?</p> <p>8 A My understanding is that a large number of</p> <p>9 them were purchased fairly early, sometime in the --</p> <p>10 sometime after 2000, shortly thereafter. And then a</p> <p>11 large number were purchased more recently.</p> <p>12 I've seen the numbers; I've forgotten. I</p> <p>13 don't have them off the top of my head.</p> <p>14 Q Let's assume for the sake of argument that the</p> <p>15 iVotronics were purchased in 2002. I think that fell</p> <p>16 within your range.</p> <p>17 A That sounds right.</p> <p>18 Q If that is the case, is it true that the</p> <p>19 software that is loaded on the iVotronics today is the</p> <p>20 same software -- let me retract that and rephrase.</p> <p>21 Based on your expert opinion with your</p> <p>22 experience with voting systems, is it your belief that</p> <p>23 software used on the iVotronics for the recent</p> <p>24 election is the same software that was loaded on the</p> <p>25 equipment when they were purchased in 2002?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>167</p> <p>1 MR. ZIMMERMAN: I will just stop there, then,</p> <p>2 Your Honor. Thank you, Professor Wallach.</p> <p>3 THE COURT: Is that it? Time for break. 9:00</p> <p>4 in the morning?</p> <p>5 MR. DeGRANDY: Yes, Your Honor. I would say</p> <p>6 before we break, Your Honor, Your Honor granted</p> <p>7 this evidentiary hearing obviously to provide an</p> <p>8 opportunity for both the plaintiff and defendants</p> <p>9 due process opportunity to present their case.</p> <p>10 Tomorrow we have only three hours. And I just</p> <p>11 wanted to, at this point, put on the record that we</p> <p>12 do need a meaningful opportunity to present our</p> <p>13 case.</p> <p>14 THE COURT: I'm going to give you a meaningful</p> <p>15 opportunity. If it goes beyond tomorrow, it goes</p> <p>16 beyond tomorrow. I'm not going to short-circuit</p> <p>17 anybody. I'm not going to keep anybody from</p> <p>18 presenting their full side.</p> <p>19 MR. DeGRANDY: Thank you very much, Your</p> <p>20 Honor.</p> <p>21 THE COURT: Have a good evening.</p> <p>22 MR. ELBRECHT: Your Honor, I represent the</p> <p>23 canvassing board of Sarasota. We tried to</p> <p>24 scheduled a motion for judgment on pleadings. It</p> <p>25 looks as if it now it won't heard tomorrow in the</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>166</p> <p>1 MR. DeGRANDY: Objection, Your Honor, there</p> <p>2 was no testimony elicited on direct as to what</p> <p>3 software was operating on iVotronics in Sarasota</p> <p>4 County.</p> <p>5 THE COURT: If he knows, let him answer. Do</p> <p>6 you know?</p> <p>7 THE WITNESS: Yeah. My understanding --</p> <p>8 THE COURT: Not your understanding. Do you</p> <p>9 know, yes or no?</p> <p>10 THE WITNESS: The voting machines today are</p> <p>11 running software version 8.0.1.2. I don't know</p> <p>12 what the original version was.</p> <p>13 BY MR. ZIMMERMAN:</p> <p>14 Q Is it true that software used in voting</p> <p>15 equipment is updated as a matter -- let me retract</p> <p>16 that. Is it true that voting equipment software is</p> <p>17 updated after it has been installed and certified for</p> <p>18 use in various jurisdictions?</p> <p>19 A Yes. Vendors update their software.</p> <p>20 Q What reason would a vendor have for updating</p> <p>21 software?</p> <p>22 MR. DeGRANDY: Objection, Your Honor. Again,</p> <p>23 beyond the scope of direct --</p> <p>24 THE COURT: It is beyond the scope of direct.</p> <p>25 I don't know that that's an issue here, anyway.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>168</p> <p>1 time period. I was wondering if we could</p> <p>2 reschedule that at another time?</p> <p>3 THE COURT: I've worked for her for 28 years.</p> <p>4 She's the woman you talk to, Ms. Jones. Have a</p> <p>5 good evening.</p> <p>6 (The proceedings were adjourned at 5:00 p.m.)</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

1	CERTIFICATE OF REPORTER	169
2	STATE OF FLORIDA)	
	COUNTY OF LEON)	
5	I, SARAH B. GILROY, Registered Professional Reporter,	
6	certify that the foregoing proceedings were taken before	
7	me at the time and place therein designated; that my	
8	shorthand notes were thereafter translated under my	
9	supervision; and the foregoing pages numbered 1 through	
10	168 are a true and correct record of the aforesaid	
11	proceedings.	
12	I further certify that I am not a relative, employee,	
13	attorney or counsel of any parties, nor am I a relative	
14	or employee of any of the parties' attorney or counsel	
15	connected with the action, nor am I financially	
16	interested in the action.	
17	DATED this ____ day of December, 2006.	
18		
19		
20		
21	SARAH B. GILROY, RPR, CRR	
22	Notary Public	
23	1-800-934-9090	
	850-878-2221	
24	My Commission Expires: 02-02-10	
	My Commission Number: DD 075718	
25	ACCURATE STENOGRAPHY REPORTERS, INC	

Tab 27

Jennings Exhibits
Professor Charles Stewart III
Political Science Department
Massachusetts Institute of Technology

Exhibit 1

- A — Official Election Returns
- B — Undervotes
- C — Sarasota County vs. The Remaining Counties

Exhibit 2 — Sarasota Early Voting vs. Sarasota Absentee Voting

Exhibit 3 — Sarasota Election-Day Voting vs. Sarasota Absentee Voting

Exhibit 4 — House Vote by Voter Partisanship

Exhibit 5 — Distribution of Excess Undervotes to Jennings and Buchanan

Exhibit 6 — Estimated Winning Margin for Different Levels of Excess Undervote

Exhibit 7

- A — Sarasota County Ballot, Page 2
- B — Sarasota County Ballot, Summary Ballot
- C — 2000 Palm Beach County Butterfly Ballot
- D — 2003 California Gubernatorial Ballot

Exhibit 8

- A — Undervote Rates by Machine-Preparation Dates — Table
- B — Undervote Rates by Machine-Preparation Dates — Graph

Official Election Returns

County	Buchanan	Jennings
Charlotte	4,460	4,277
DeSoto	3,471	3,058
Hardee	2,629	1,686
Manatee	50,117	44,432
Sarasota	58,632	65,487
TOTAL	119,309	118,940

Undervotes

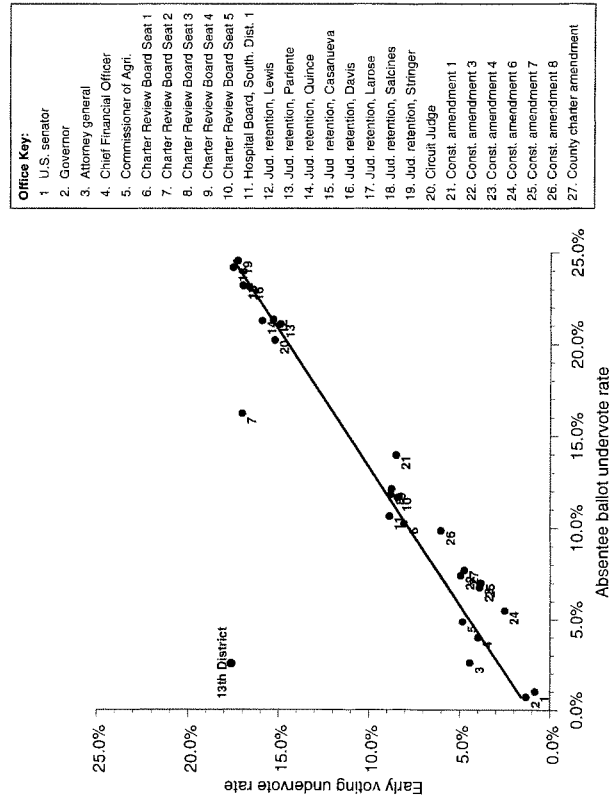
County	Undervotes	Rate
Charlotte	225	2.5%
DeSoto	142	2.1%
Hardee	265	5.8%
Manatee	2,324	2.4%
Sarasota	18,412	12.9%
TOTAL	21,368	8.2%

1200

Sarasota County vs. the Remaining Counties

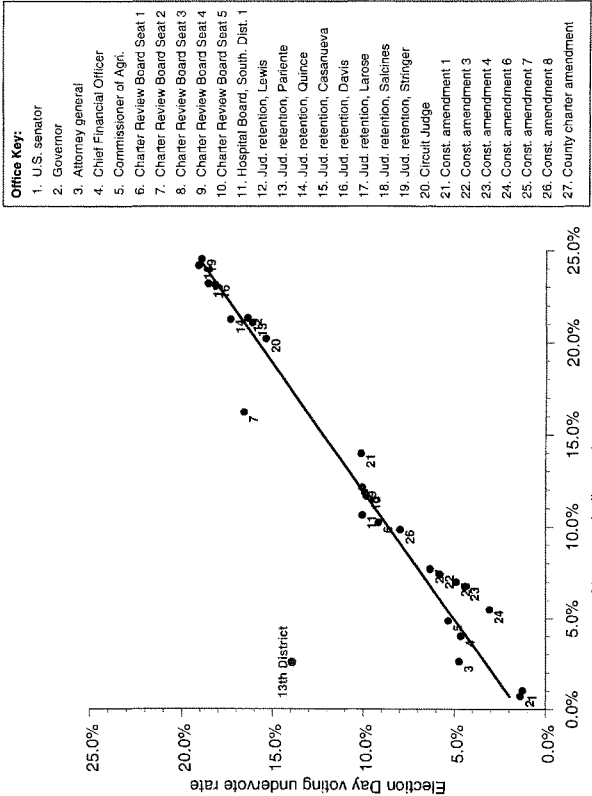
County	Buchanan	Jennings	Undervote
Sarasota County	58,632	65,487	18,412
The Four Other Counties	60,677	53,453	2,956
TOTAL	119,309	118,940	21,368

Sarasota Early Voting vs. Sarasota Absentee Voting



A-571

Sarasota Election-Day Voting vs. Absentee Voting



A-572

House Vote by Voter Partisanship

Actual votes							Jennings pct. of 2-party vote
	Partisanship scale	For		For		Total	
		Jennings	Buchanan	Undervotes	Undervotes		
Strong Dem.	-5	35,480	764	5,902	42,146	97.9%	
	-4	1,558	132	737	2,427	92.2%	
	-3	4,921	899	1,915	7,735	84.6%	
	-2	723	202	543	1,468	78.2%	
	-1	2,948	1,002	930	4,880	76.6%	
	0	586	345	637	1,568	62.9%	
	1	2,818	1,835	1,030	5,683	60.6%	
	2	380	722	608	1,710	34.5%	
	3	2,974	5,712	1,482	10,168	34.2%	
	4	214	1,853	697	2,764	10.4%	
Strong Rep.	5	1,904	34,101	3,365	39,370	5.3%	
Total		54,506	47,567	17,846	119,919	53.4%	

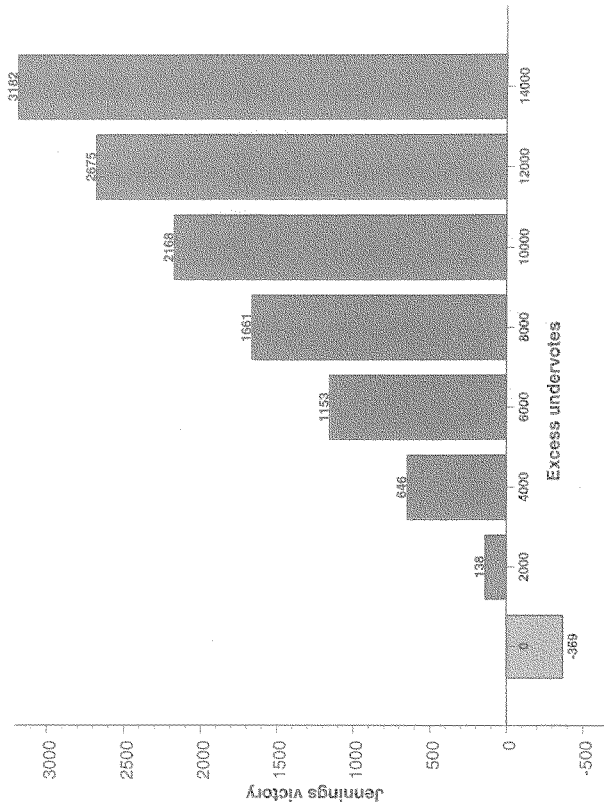
Distribution of Excess Undervotes to Jennings and Buchanan

					Excess undervotes			
					Allocated	Allocated	to	
Partisanship	Actual Undervotes	Total	Jennings	Buchanan	to	to	Net to	
Strong D	-5	5,902	4,630	4,532	98		Jennings	4,434
	-4	737	578	533	45			488
	-3	1,915	1,502	1,270	232			1,038
	-2	543	426	333	93			240
	-1	930	730	545	185			360
	0	637	500	315	185			130
	1	1,030	808	489	319			170
	2	608	477	164	313			-149
	3	1,482	1,163	398	765			-367
	4	697	547	57	490			-433
Strong R	5	3,365	2,640	140	2,500			-2,360
Total		17,846	14,001*	8,776	5,225			3,551

*Does not add to 14,000 because of rounding.

5

Estimated Winning Margin for Different Levels of Excess Undervote



A-575

U.S. REPRESENTATIVE IN CONGRESS
13TH CONGRESSIONAL DISTRICT
(Vote for One)

Vern Buchanan	REP	<input type="checkbox"/>
Christine Jennings	DEM	<input type="checkbox"/>

STATE

GOVERNOR AND LIEUTENANT GOVERNOR
(Vote for One)

Charlie Crist	REP	<input type="checkbox"/>
Jeff Kotkamp	DEM	<input type="checkbox"/>
Jim Davis	REP	<input type="checkbox"/>
Baryl L. Jones	NPA	<input type="checkbox"/>
Max Linn	NPA	<input type="checkbox"/>
Tom Macklin	NPA	<input type="checkbox"/>
Richard Paul Dembinsky	NPA	<input type="checkbox"/>
Dr. Joe Smith	NPA	<input type="checkbox"/>
John Wayne Smith	NPA	<input type="checkbox"/>
James J. Kearney	NPA	<input type="checkbox"/>
Karl C.C. Behm	NPA	<input type="checkbox"/>
Carol Castagnero		<input type="checkbox"/>
Write-In		<input type="checkbox"/>

Instructions

Return to any contest
by touching the contest
title. To cast your
ballot now, press the
NOTE button.

UNITED STATES SENATOR..... No Selection Made	<input type="checkbox"/>	STATE REPRESENTATIVE..... No Selection Made	<input type="checkbox"/>
U.S. REPRESENTATIVE IN CONGR..... No Selection Made	<input type="checkbox"/>	CHARTER REVIEW BOARD DISTRICT..... No Selection Made	<input type="checkbox"/>
GOVERNOR AND LIEUTENANT GOV..... No Selection Made	<input type="checkbox"/>	CHARTER REVIEW BOARD DISTRICT..... No Selection Made	<input type="checkbox"/>
ATTORNEY GENERAL..... No Selection Made	<input type="checkbox"/>	CHARTER REVIEW BOARD DISTRICT..... No Selection Made	<input type="checkbox"/>
CHIEF FINANCIAL OFFICER..... No Selection Made	<input type="checkbox"/>	CHARTER REVIEW BOARD DISTRICT..... No Selection Made	<input type="checkbox"/>
COMMISSIONER OF AGRICULTURE..... No Selection Made	<input type="checkbox"/>	CHARTER REVIEW BOARD DISTRICT..... No Selection Made	<input type="checkbox"/>



2003 California Gubernatorial Ballot

Statewide Special Election Orange County, California October 7, 2003		OFFICIAL BALLOT	
<p>INSTRUCTIONS:</p> <p>1. Mark your ballot by filling in the circle next to the name of the candidate you wish to vote for. Do not mark any other circles.</p> <p>2. If you are voting for more than one candidate, mark a separate circle for each candidate.</p> <p>3. If you are voting for a candidate who is not listed on this ballot, write the name of the candidate in the space provided.</p> <p>4. If you are voting for a candidate who is not listed on this ballot, write the name of the candidate in the space provided.</p> <p>5. If you are voting for a candidate who is not listed on this ballot, write the name of the candidate in the space provided.</p>		<p>PROPOSAL</p> <p>PROPOSAL 1</p> <p>PROPOSAL 2</p> <p>PROPOSAL 3</p> <p>PROPOSAL 4</p> <p>PROPOSAL 5</p> <p>PROPOSAL 6</p> <p>PROPOSAL 7</p> <p>PROPOSAL 8</p> <p>PROPOSAL 9</p> <p>PROPOSAL 10</p> <p>PROPOSAL 11</p> <p>PROPOSAL 12</p> <p>PROPOSAL 13</p> <p>PROPOSAL 14</p> <p>PROPOSAL 15</p> <p>PROPOSAL 16</p> <p>PROPOSAL 17</p> <p>PROPOSAL 18</p> <p>PROPOSAL 19</p> <p>PROPOSAL 20</p> <p>PROPOSAL 21</p> <p>PROPOSAL 22</p> <p>PROPOSAL 23</p> <p>PROPOSAL 24</p> <p>PROPOSAL 25</p> <p>PROPOSAL 26</p> <p>PROPOSAL 27</p> <p>PROPOSAL 28</p> <p>PROPOSAL 29</p> <p>PROPOSAL 30</p> <p>PROPOSAL 31</p> <p>PROPOSAL 32</p> <p>PROPOSAL 33</p> <p>PROPOSAL 34</p> <p>PROPOSAL 35</p> <p>PROPOSAL 36</p> <p>PROPOSAL 37</p> <p>PROPOSAL 38</p> <p>PROPOSAL 39</p> <p>PROPOSAL 40</p> <p>PROPOSAL 41</p> <p>PROPOSAL 42</p> <p>PROPOSAL 43</p> <p>PROPOSAL 44</p> <p>PROPOSAL 45</p> <p>PROPOSAL 46</p> <p>PROPOSAL 47</p> <p>PROPOSAL 48</p> <p>PROPOSAL 49</p> <p>PROPOSAL 50</p> <p>PROPOSAL 51</p> <p>PROPOSAL 52</p> <p>PROPOSAL 53</p> <p>PROPOSAL 54</p> <p>PROPOSAL 55</p> <p>PROPOSAL 56</p> <p>PROPOSAL 57</p> <p>PROPOSAL 58</p> <p>PROPOSAL 59</p> <p>PROPOSAL 60</p> <p>PROPOSAL 61</p> <p>PROPOSAL 62</p> <p>PROPOSAL 63</p> <p>PROPOSAL 64</p> <p>PROPOSAL 65</p> <p>PROPOSAL 66</p> <p>PROPOSAL 67</p> <p>PROPOSAL 68</p> <p>PROPOSAL 69</p> <p>PROPOSAL 70</p> <p>PROPOSAL 71</p> <p>PROPOSAL 72</p> <p>PROPOSAL 73</p> <p>PROPOSAL 74</p> <p>PROPOSAL 75</p> <p>PROPOSAL 76</p> <p>PROPOSAL 77</p> <p>PROPOSAL 78</p> <p>PROPOSAL 79</p> <p>PROPOSAL 80</p> <p>PROPOSAL 81</p> <p>PROPOSAL 82</p> <p>PROPOSAL 83</p> <p>PROPOSAL 84</p> <p>PROPOSAL 85</p> <p>PROPOSAL 86</p> <p>PROPOSAL 87</p> <p>PROPOSAL 88</p> <p>PROPOSAL 89</p> <p>PROPOSAL 90</p> <p>PROPOSAL 91</p> <p>PROPOSAL 92</p> <p>PROPOSAL 93</p> <p>PROPOSAL 94</p> <p>PROPOSAL 95</p> <p>PROPOSAL 96</p> <p>PROPOSAL 97</p> <p>PROPOSAL 98</p> <p>PROPOSAL 99</p> <p>PROPOSAL 100</p>	<p>PROPOSAL</p> <p>PROPOSAL 1</p> <p>PROPOSAL 2</p> <p>PROPOSAL 3</p> <p>PROPOSAL 4</p> <p>PROPOSAL 5</p> <p>PROPOSAL 6</p> <p>PROPOSAL 7</p> <p>PROPOSAL 8</p> <p>PROPOSAL 9</p> <p>PROPOSAL 10</p> <p>PROPOSAL 11</p> <p>PROPOSAL 12</p> <p>PROPOSAL 13</p> <p>PROPOSAL 14</p> <p>PROPOSAL 15</p> <p>PROPOSAL 16</p> <p>PROPOSAL 17</p> <p>PROPOSAL 18</p> <p>PROPOSAL 19</p> <p>PROPOSAL 20</p> <p>PROPOSAL 21</p> <p>PROPOSAL 22</p> <p>PROPOSAL 23</p> <p>PROPOSAL 24</p> <p>PROPOSAL 25</p> <p>PROPOSAL 26</p> <p>PROPOSAL 27</p> <p>PROPOSAL 28</p> <p>PROPOSAL 29</p> <p>PROPOSAL 30</p> <p>PROPOSAL 31</p> <p>PROPOSAL 32</p> <p>PROPOSAL 33</p> <p>PROPOSAL 34</p> <p>PROPOSAL 35</p> <p>PROPOSAL 36</p> <p>PROPOSAL 37</p> <p>PROPOSAL 38</p> <p>PROPOSAL 39</p> <p>PROPOSAL 40</p> <p>PROPOSAL 41</p> <p>PROPOSAL 42</p> <p>PROPOSAL 43</p> <p>PROPOSAL 44</p> <p>PROPOSAL 45</p> <p>PROPOSAL 46</p> <p>PROPOSAL 47</p> <p>PROPOSAL 48</p> <p>PROPOSAL 49</p> <p>PROPOSAL 50</p> <p>PROPOSAL 51</p> <p>PROPOSAL 52</p> <p>PROPOSAL 53</p> <p>PROPOSAL 54</p> <p>PROPOSAL 55</p> <p>PROPOSAL 56</p> <p>PROPOSAL 57</p> <p>PROPOSAL 58</p> <p>PROPOSAL 59</p> <p>PROPOSAL 60</p> <p>PROPOSAL 61</p> <p>PROPOSAL 62</p> <p>PROPOSAL 63</p> <p>PROPOSAL 64</p> <p>PROPOSAL 65</p> <p>PROPOSAL 66</p> <p>PROPOSAL 67</p> <p>PROPOSAL 68</p> <p>PROPOSAL 69</p> <p>PROPOSAL 70</p> <p>PROPOSAL 71</p> <p>PROPOSAL 72</p> <p>PROPOSAL 73</p> <p>PROPOSAL 74</p> <p>PROPOSAL 75</p> <p>PROPOSAL 76</p> <p>PROPOSAL 77</p> <p>PROPOSAL 78</p> <p>PROPOSAL 79</p> <p>PROPOSAL 80</p> <p>PROPOSAL 81</p> <p>PROPOSAL 82</p> <p>PROPOSAL 83</p> <p>PROPOSAL 84</p> <p>PROPOSAL 85</p> <p>PROPOSAL 86</p> <p>PROPOSAL 87</p> <p>PROPOSAL 88</p> <p>PROPOSAL 89</p> <p>PROPOSAL 90</p> <p>PROPOSAL 91</p> <p>PROPOSAL 92</p> <p>PROPOSAL 93</p> <p>PROPOSAL 94</p> <p>PROPOSAL 95</p> <p>PROPOSAL 96</p> <p>PROPOSAL 97</p> <p>PROPOSAL 98</p> <p>PROPOSAL 99</p> <p>PROPOSAL 100</p>

Undervote Rates by Machine Preparation Dates -- Table

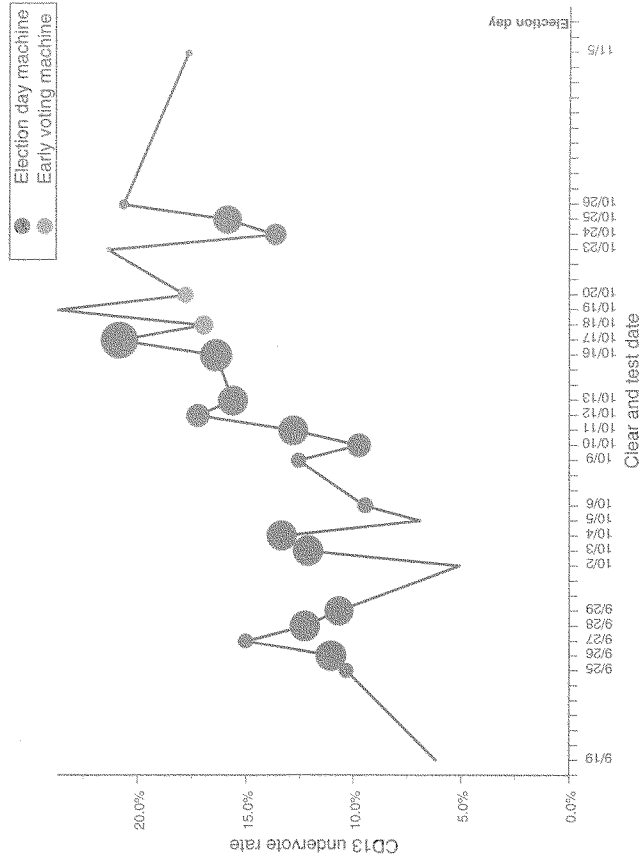
Date	All machines			Election day machines			Early voting machines		
	Number of machines**	Number of voters	Undervote, CD 13	Number of machines	Number of voters	Undervote, CD 13	Number of machines	Number of voters	Undervote, CD 13
9/19/2006	1	81	6.2%	1	81	6.2%			
9/25/2006	27	1,837	10.3%	27	1,837	10.3%			
9/26/2006	112	7,463	11.1%	112	7,463	11.1%			
9/27/2006	28	1,898	15.0%	28	1,898	15.0%			
9/28/2006	107	6,870	12.3%	107	6,870	12.3%			
9/29/2006	99	7,332	10.7%	99	7,332	10.7%			
10/2/2006	1	79	5.1%	1	79	5.1%			
10/3/2006*	108	6,693	12.1%	108	6,693	12.1%			
10/4/2006	105	6,476	13.4%	105	6,476	13.4%			
10/5/2006	1	29	6.9%	1	29	6.9%			
10/6/2006	30	2,103	9.5%	30	2,103	9.5%			
10/9/2006	28	2,126	12.6%	28	2,126	12.6%			
10/10/2006	66	4,412	9.8%	66	4,412	9.8%			
10/11/2006	102	7,734	12.8%	102	7,734	12.8%			
10/12/2006	63	4,712	17.2%	63	4,712	17.2%			
10/13/2006	103	6,747	15.6%	103	6,747	15.6%			
10/16/2006	118	7,372	16.4%	118	7,372	16.4%			
10/17/2006	158	9,273	20.9%	158	9,273	20.9%			
10/18/2006	44	13,498	17.0%				44	13,498	17.0%
10/19/2006	1	410	23.7%				1	410	23.7%
10/20/2006	32	14,056	17.8%				32	14,056	17.8%
10/23/2006	4	1,409	21.5%				4	1,409	21.5%
10/24/2006	54	2,500	13.7%	53	1,788	13.1%			
10/25/2006	92	4,167	16.0%	90	3,375	15.4%			
10/26/2006	12	506	20.9%	12	506	20.9%			
11/5/2006	7	136	17.6%	7	136	17.6%			
Total	1,503	119,919	14.9%	1,419	89,042	13.9%	84	30,877	17.6%
9/19-10/11	815	55,133	11.8%	815	55,133	11.8%	-	-	-
10/12-11/5	688	64,786	17.5%	604	33,909	17.4%	84	30,877	17.6%

*The "clear and test" date for machine number 105418 was 7/1/2004. However, the date was immediately changed to 10/03/2006, which is the date on which the machine's statistics are reflected in the table.

**Four machines were "cleared and tested" but recorded no votes. They are excluded from this table.

8A

Undervote Rates by Machine Preparation Dates -- Graph



Note: One early voting machine was prepared on 10/24; two were prepared on 10/25.

STATE	
GOVERNOR & LIEUTENANT GOVERNOR (Vote For One)	
Charlie Crist	REP <input type="checkbox"/>
Jeff Kotkamp	DEN <input type="checkbox"/>
Jim Davis	REP <input type="checkbox"/>
Daryl L. Jones	NPA <input type="checkbox"/>
Max Lim	NPA <input type="checkbox"/>
Tom Macklin	NPA <input type="checkbox"/>
Richard Paul Benbinsky	NPA <input type="checkbox"/>
Dr. Joe Smith	NPA <input type="checkbox"/>
John Wayne Smith	NPA <input type="checkbox"/>
James J. Kearney	NPA <input type="checkbox"/>
Karl C.C. Behn	NPA <input type="checkbox"/>
Carol Castagnaro	NPA <input type="checkbox"/>
Write-In	<input type="checkbox"/>

ATTORNEY GENERAL (Vote For One)	
Bill McCollum	REP <input type="checkbox"/>
Walter "Skip" Campbell	DEN <input type="checkbox"/>

HOSPITAL BOARD SOUTHERN DISTRICT SEAT 1 (Vote for One)	
Gerald M. Phillips	REP <input type="checkbox"/>
Sam George	DEM <input type="checkbox"/>

IMPORTANT

JUSTICE OF THE SUPREME COURT

Shall Justice R. Fred Lewis of the Supreme Court be retained in office?

YES ☐

NO ☐

A-582

JUSTICE OF THE SUPREME COURT

Shall Justice Barbara Joan Pariente of the Supreme Court be retained in office?

YES ☐

NO ☐

Tab 28

<p>174</p> <p>1 THE COURT: Be seated, please. Morning. You 2 may proceed.</p> <p>3 MR. FINLEY: Your Honor, Lowell Finley for the Fedder plaintiffs, with just a quick housekeeping matter. We have our motion for an order on 6 anti-spoilation pending. And I wanted to ask 7 whether the court expects to hear that following 8 the hearing on this motion today.</p> <p>9 THE COURT: Well that depends upon when we 10 finish. Okay?</p> <p>11 MR. FINLEY: Thank you.</p> <p>12 THE COURT: I don't even know if we're going 13 to finish this today. I don't know how many 14 witnesses everybody has. And like I told y'all 15 yesterday, I'm not going to short-circuit anybody 16 from presenting their case. Okay?</p> <p>17 MR. FINLEY: Thank you.</p> <p>18 MR. DeGRANDY: Good morning, Your Honor.</p> <p>19 THE COURT: Morning.</p> <p>20 CROSS EXAMINATION</p> <p>21 BY MR. DeGRANDY:</p> <p>22 Q Morning, Professor.</p> <p>23 A Good morning.</p> <p>24 Q Professor, my name is Miguel DeGrandy. I 25 represent ES&S. I'm going to be asking you questions</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>176</p> <p>1 A That was an organization produced by a group 2 run by Ben Cohen of Ben and Jerry's ice cream. And 3 they have a number of advocacy positions that they've 4 taken over the past. They decided to advocate against 5 paperless electronic voting machines.</p> <p>6 Q And you're associated with that group somehow?</p> <p>7 A They invited me to speak at a press conference 8 they were having.</p> <p>9 Q And what is ACCURATE again?</p> <p>10 A ACCURATE is a national science foundation 11 funded research center that studies the security and 12 policy and human factors issues of electronic voting 13 systems.</p> <p>14 Q Okay. Now, speaking of being accurate, 15 yesterday you told the judge that you did not have to 16 review the Diebold code under the auspices of a 17 protective order; correct?</p> <p>18 A That's correct.</p> <p>19 Q But what you didn't tell the court is the 20 reason that happened is because Diebold had 21 inadvertently put their code on the Internet, so it 22 was accessible to the public; correct?</p> <p>23 A That is correct.</p> <p>24 Q So you didn't have to ask for permission to 25 evaluate it?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>175</p> <p>1 in this matter. If there is anything that you do not 2 understand, please feel free to tell me. I will be 3 happy to repeat the question. If you answer the 4 question, I assume that you understand the basis of my 5 question.</p> <p>6 A Okay.</p> <p>7 Q Is that fair? Okay. Now, sir, first of all, 8 preliminarily, were you instructed by your attorney 9 yesterday regarding the judge's order not to discuss 10 the testimony that you will give in this case?</p> <p>11 A Yes, I was.</p> <p>12 Q And did you discuss your testimony with any of 13 the lawyers for the plaintiff's side?</p> <p>14 A No, I did not.</p> <p>15 Q Okay. Not at breakfast?</p> <p>16 A Not at breakfast.</p> <p>17 Q Now, sir, is it fair to say that you're 18 critical of all machines that don't have paper trail 19 verification features?</p> <p>20 A I have said things along those lines, yes.</p> <p>21 Q And you participate in an organizations that ' advocates for a verifiable voter paper trail; is that correct?</p> <p>24 A That's correct.</p> <p>25 Q What is thecomputeratemyvote.org?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>177</p> <p>1 A That's correct.</p> <p>2 Q Now in your report you reached no conclusion 3 regarding the cause of the undervote; correct?</p> <p>4 A I have five hypotheses that could explain the 5 undervote.</p> <p>6 Q But my question is, you reached no 7 conclusions; correct?</p> <p>8 A That's correct.</p> <p>9 Q Now, were you present in Sarasota for the 10 logic and accuracy tests?</p> <p>11 A I was not.</p> <p>12 Q Did you hear testimony by Mr. -- by Professor 13 Stewart regarding machines that were cleared and 14 tested after October 12th?</p> <p>15 A Yes, I did.</p> <p>16 Q Did you hear my colleague, Mr. Thomas, mention 17 two machines by serial number?</p> <p>18 A Yes, I did.</p> <p>19 Q Did you know those machines were the machines 20 in the precincts picked by Ms. Jennings for the 21 parallel tests?</p> <p>22 A I believe you when you say that.</p> <p>23 Q And those are the same ones that the state 24 said in its report yesterday that functioned with 100 25 percent accuracy; is that not correct?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>178</p> <p>1 A That is my understanding. I haven't actually 2 seen that document yet.</p> <p>3 Q You have not seen that document?</p> <p>4 A I believe you said yesterday that that 5 document only became available yesterday. I haven't 6 had a chance to read it.</p> <p>7 Q You have not. Okay. Would that make any 8 difference to you if you saw a document, an official 9 report from the state that documented both parallel 10 reports and said --</p> <p>11 A If you would like me to comment on what 12 they've done, it would be helpful if I had a chance to 13 study what was done.</p> <p>14 Q Your attorneys haven't given that report to 15 you?</p> <p>16 A They have not.</p> <p>17 Q Now, did you know that both of those machines 18 that Mr. Thomas mentioned by serial number and that 19 were from the precincts that Ms. Jennings picked were 20 cleared and tested after October 12th?</p> <p>21 A I was not aware of that.</p> <p>22 Q Now, clear and test is a process that is done 23 between elections; correct?</p> <p>24 A That's correct.</p> <p>25 Q And the purpose of that is to empty the ACCURATE STENOGRAPH REPORTERS, INC.</p>	<p>180</p> <p>1 in effect verifies that the clear and test was done 2 correctly?</p> <p>3 A The clear and test operation is a part of many 4 other things that could potentially be done, and the 5 procedures would vary from county to county. For 6 example, the procedures might involve calibrating the 7 machine --</p> <p>8 Q That's not my question. Does a zero tape 9 function verify that the clear and test was done 10 correctly?</p> <p>11 A It will verify there are no votes in the 12 machine.</p> <p>13 Q Which is what the clear and test function 14 does, erases the votes from the machine?</p> <p>15 A Yes.</p> <p>16 Q Now, in response to questions by Mr. Coffey, 17 you talked about certain theories you wanted to test; 18 correct?</p> <p>19 A That's correct.</p> <p>20 Q And you also showed us a program that 21 contained a bug?</p> <p>22 MR. DeGRANDY: And that's Exhibit 10; is it?</p> <p>23 MR. COFFEY: Yes.</p> <p>24 BY MR. DeGRANDY:</p> <p>25 Q Do you have that in front of you? ACCURATE STENOGRAPH REPORTERS, INC.</p>
<p>179</p> <p>1 machine's memory of all that it recorded from the 2 previous election --</p> <p>3 A That's correct.</p> <p>4 Q -- to prepare it for the next election? Now, 5 do you know how many steps are performed to do a clear 6 and test?</p> <p>7 A I have read the manual, and I'm generally 8 familiar with the process.</p> <p>9 Q It takes less than five minutes; right?</p> <p>10 A Approximately.</p> <p>11 Q Now, what is a zero tape?</p> <p>12 A A zero tape is something that poll workers 13 will produce before the election begins. They hook a 14 printer up to a machine and ask the machine to state 15 on paper that it has no votes stored within it.</p> <p>16 Q And that's done right before the election; 17 correct, either the -- if you boot them up at night or 18 in the morning, you would do that right about that 19 time?</p> <p>20 A Typically it's done in the morning before the 21 polls open.</p> <p>22 Q And the zero tape operation would show there 23 is nothing in the machine; correct?</p> <p>24 A It states that, that's correct.</p> <p>25 Q Okay. So, therefore, the zero tape function ACCURATE STENOGRAPH REPORTERS, INC.</p>	<p>181</p> <p>1 A I do not.</p> <p>2 Q Would you like a copy?</p> <p>3 A Sure.</p> <p>4 MR. DeGRANDY: May I approach, Your Honor?</p> <p>5 THE COURT: Sure.</p> <p>6 MR. DeGRANDY: Thank you, sir.</p> <p>7 BY MR. DeGRANDY:</p> <p>8 Q Now, let's go over that. In this election 9 there are three candidates; Alice, Bob and Charlotte; 10 correct?</p> <p>11 A Yes.</p> <p>12 Q And what you said this bug does is that it 13 does record the votes cast for Alice to Alice; 14 correct?</p> <p>15 A Yes.</p> <p>16 Q It records the votes cast for Bob to Bob?</p> <p>17 A Yes.</p> <p>18 Q But as to Charlie, it records Charlie's votes 19 plus everybody else's votes?</p> <p>20 A That's correct.</p> <p>21 Q Okay. So if we had 60 people vote in the 22 election, let's assume that 20 voted for Alice, 20 23 voted for Bob, 20 voted for Charlie; correct?</p> <p>24 A Yes.</p> <p>25 Q What would this software program produce? ACCURATE STENOGRAPH REPORTERS, INC.</p>

<p>182</p> <p>1 A This particular program would produce 60 votes 2 for Charlie. 3 Q And 20 votes for Alice? 4 A And 20 for Bob. 5 Q And 20 for Bob. So you wouldn't have to look 6 at the source code to determine that there was a 7 malfunction, because there are 100 votes recorded, and 8 only 60 people voted? 9 A In this particular example, yes. 10 Q So whether it was ballot stuffing or source 11 code malfunction, you don't have to look at the source 12 code to know it's an invalid election; correct? 13 A For this particular example, yes. 14 Q Now, one of the theories you wanted to test 15 was a malfunction between the time the voter touched 16 the screen and the time the voter -- the vote was 17 recorded; correct? 18 A Yes. 19 Q Now, if there was a malfunction that caused 20 the vote to be lost in that process, that could be 21 replicated in a parallel test; correct? 22 A Maybe, maybe not. 23 Q Now, a parallel test is a test where you 24 basically use a script; correct? 25 A Yes.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>184</p> <p>1 Q But you have given testimony in certain 2 legislative committees where you have said that, even 3 an open source platform, it may take years for anyone 4 to find something if something is there? 5 A That's also a possibility. 6 Q Now, you also wanted to study the connection 7 between volatile and nonvolatile memory. Now if a 8 problem existed with that connection that caused votes 9 to be lost, that could be replicated in a parallel 10 test; right? 11 A Perhaps, perhaps not. 12 Q Calibration of the machine and the source code 13 on calibration, that's another thing you wanted to 14 look at. 15 A That's correct. 16 Q And that deals with how the screen is 17 calibrated so that when you touch this part, that vote 18 for that candidate is recorded; correct? 19 A That's correct. 20 Q Okay. And that would also show up in a 21 parallel test; wouldn't it? 22 A Perhaps, perhaps not. 23 Q Now, reading and processing ballot definitions 24 like too many candidates on one page, have you studied 25 other races with these characteristics that would lead</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>183</p> <p>1 Q And that script is based on event logs; 2 correct? 3 A Can be. 4 Q Okay. Are you aware that the parallel tests 5 done by the state were based on an event log? 6 A They were. 7 Q So basically a person has that script and 8 tries to replicate those votes; correct? 9 A That's correct. 10 Q In the sequence that the script says and in 11 the timing that the script says; correct? 12 A That's correct. 13 Q And if you're doing it based on an event log, 14 it parallels the sequences of votes and the timing in 15 that event log? 16 A Approximately, but not exactly. 17 Q Okay. And so your testimony is that a 18 parallel test would not show a malfunction of that 19 nature? 20 A A broad truism is that testing can never 21 identify the absence of bugs; it can only show the 22 presence of bugs. 23 Q Nor can the review of a source code. It may 24 take years, and you may not find it? 25 A Or I might find something very quickly.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>185</p> <p>1 you to believe that there is a problem? 2 A I have anecdotal evidence that suggests there 3 might be a problem, namely the 18,000 undervotes. 4 Q And the anecdotal evidence is just the fact 5 there were 18,000 undervotes? 6 A I guess that's not anecdotal; that's a fact. 7 Q Now basically you state you can't rule out, to 8 a reasonable degree of scientific certainty, that 9 there was a bug without the source code; correct? 10 A That's correct. 11 Q So if I were to have -- well in this case 12 Ms. Jennings lost by 369 votes; is that correct? 13 A I believe that was the certified total. 14 Q All right. And that's a small fraction, small 15 percentage of difference between the candidates; 16 correct? 17 A That's correct. 18 Q But if I were to file a complaint because I 19 lost an election, and I said, you know, lost by a 20 10-point spread, but there was some sort of source 21 code bug that would assign every, you know, one out of 22 every five of my votes to the opponent, you would have 23 the same conclusion; you couldn't prove or disprove 24 without the source code? 25 A The source code -- I have to read the source</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>186</p> <p>1 code in order to reason about its correctness.</p> <p>2 Q And if the spread was 20 points in the</p> <p>3 election, you would have the same response?</p> <p>4 A Yes.</p> <p>5 Q And if the spread was 50 points, you would</p> <p>6 have the same response?</p> <p>7 A Yes.</p> <p>8 Q Now, your report says that you were retained</p> <p>9 to provide an opinion concerning information and</p> <p>10 equipment that might be necessary to conduct a</p> <p>11 forensic investigation; correct?</p> <p>12 A That's correct.</p> <p>13 Q And you posit five different hypotheses?</p> <p>14 A That's correct.</p> <p>15 Q And let's go through those. The -- on the</p> <p>16 voter abstention hypothesis, you talk about how you</p> <p>17 can try to vent that hypothesis, and you say, for</p> <p>18 example, the telephone-based voter polls would not be</p> <p>19 reliable because survey participants, in other words,</p> <p>20 might lie to best support their candidate or</p> <p>21 preference; is that correct?</p> <p>22 A That's correct.</p> <p>23 Q So anecdotal evidence isn't very reliable in</p> <p>24 that case; is it?</p> <p>25 A In that particular case, anecdotal evidence</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC</p>	<p>188</p> <p>1 absentee voting to the regular voting, and he could</p> <p>2 predict approximately how many he would consider to be</p> <p>3 normal undervotes.</p> <p>4 Q But normal undervotes do not necessarily mean</p> <p>5 voter abstention; they could be voter mistakes, a</p> <p>6 person that meant to vote but didn't?</p> <p>7 A It's possible that a portion of the normal</p> <p>8 undervotes would be normal error that normal voters</p> <p>9 might experience.</p> <p>10 Q Now, then you posit the human error</p> <p>11 hypothesis. And basically two or more races on the</p> <p>12 same page or other factors and how the race was</p> <p>13 presented may cause voter confusion; correct?</p> <p>14 A Correct.</p> <p>15 Q Now, that's not an outlandish theory; that is</p> <p>16 reasonable theory?</p> <p>17 A As are my other theories.</p> <p>18 Q Now, in that part of your report you state</p> <p>19 that, while the summary screen was presented</p> <p>20 immediately prior to when the voter casts a ballot,</p> <p>21 and it gives the opportunity for voters to recognize</p> <p>22 and correct mistakes, some voters may not read this</p> <p>23 carefully and would likewise miss the opportunity to</p> <p>24 correct their undervote; correct?</p> <p>25 A Yes.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>187</p> <p>1 would not be reliable.</p> <p>2 Q Now, also a well-meaning, honest person, you</p> <p>3 know, could believe and swear on the bible that they</p> <p>4 cast a vote, but they could have made a mistake;</p> <p>5 correct?</p> <p>6 A It's a well-understood effect.</p> <p>7 Q And we can't tell with any reasonable degree</p> <p>8 of scientific certainty how many undervotes are a</p> <p>9 result of voter abstention?</p> <p>10 A I would disagree with that.</p> <p>11 Q Okay. You think that you can determine, with</p> <p>12 a reasonable degree of scientific certainty, how many</p> <p>13 votes were a result of voter abstention?</p> <p>14 A I believe that Dr. Stewart's testimony</p> <p>15 addressed that issue quite well.</p> <p>16 Q What Dr. Stewart said was that he could</p> <p>17 conclude that there was a certain degree of excess</p> <p>18 undervotes.</p> <p>19 A Yes.</p> <p>20 Q Okay. But as to what I would guess would be</p> <p>21 the nonexcess or not normal undervotes, he didn't say</p> <p>22 that he could say how many were voter abstention, how</p> <p>23 many were mistakes, or how many were other reasons;</p> <p>24 correct?</p> <p>25 A Well, he could compare the rates from the</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC</p>	<p>189</p> <p>1 Q And then -- well let me backtrack. Let me ask</p> <p>2 you this. You heard the testimony of Professor</p> <p>3 Stewart; correct?</p> <p>4 A Yes, I did.</p> <p>5 Q And Professor Stewart did not do an analysis</p> <p>6 of other races in November in Florida with similar</p> <p>7 ballot configurations to do statistical analysis;</p> <p>8 correct?</p> <p>9 A I believe that's correct.</p> <p>10 Q But you said that the first thing that you</p> <p>11 should look to, in other words, is look to other races</p> <p>12 in Florida, using iVotronics, that have a similar</p> <p>13 visual presentation to CD 13 page in Sarasota County.</p> <p>14 That's what you said in your report is the first thing</p> <p>15 you're supposed to do to validate or disprove that</p> <p>16 theory; correct?</p> <p>17 A It's one of the many things you should do.</p> <p>18 Q But that's -- in your report you say first you</p> <p>19 would do this.</p> <p>20 A If that's what I wrote, then that's what I</p> <p>21 wrote.</p> <p>22 Q Do you want to look at your report and see if</p> <p>23 that's what you wrote? Would you agree with me that</p> <p>24 that's a fair assessment of what you wrote?</p> <p>25 A I believe that's something I would have</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>190</p> <p>1 written.</p> <p>2 Q Professor Stewart didn't do that; did he?</p> <p>3 A He did what he did.</p> <p>4 Q That's not my question. He didn't do that; did he?</p> <p>5 A I -- I've read his report. I don't recall him having done such an analysis, although he did discuss it when you examined him yesterday.</p> <p>6 Q Okay. Well let me ask you this: You're a scientist. If a professional in his field does not perform the basic analyses that should be performed to validate or disprove a theory, isn't it a fact that his opinion is pretty worthless?</p> <p>7 A I would strongly disagree with that characterization.</p> <p>8 Q Now you did say the statistical comparisons of those county results may validate the voter human error theory; correct?</p> <p>9 A If that's what I said, that was not what I meant to say, or you're misconstruing it.</p> <p>10 Q Okay. Let me ask you this: You were here for Professor Stewart's testimony, and Mr. Thomas cross-examined him; correct?</p> <p>11 A Yes.</p> <p>12 Q And Mr. Thomas asked him about Lee and Sumter</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>192</p> <p>1 percent in Lee, 24 percent in Sumter, but it wouldn't be a calibration problem, for example, if the AG race was at the bottom of the screen instead of at the top?</p> <p>2 A We don't know until we can examine the code.</p> <p>3 Q Now, then you posit a software bug hypothesis; correct?</p> <p>4 A That's correct.</p> <p>5 Q You say that, latent mistakes or errors in design that escape normal testing certification processes can be in the software; correct?</p> <p>6 A That's correct.</p> <p>7 Q Now, without looking at the software, would you agree that there is a sufficient number of time that you could replicate votes, that you could vote on a machine that would show, to a reasonable degree of scientific certainty, that there is no bug in the program?</p> <p>8 A As I said before, no amount of testing can ever prove the absence of a bug.</p> <p>9 Q Okay. But in general it's an accepted scientific premise that it is impossible to prove the absence of anything?</p> <p>10 A That's not true at all.</p> <p>11 Q Okay. All right. Now, if I voted on the machine 100,000 times, and -- according to a script,</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>191</p> <p>1 County.</p> <p>2 A Yes.</p> <p>3 Q And Mr. Thomas stated, well, those didn't use ES&S machines; correct?</p> <p>4 A That's correct.</p> <p>5 Q Okay. And he misspoke; didn't he?</p> <p>6 A I don't recall.</p> <p>7 Q In fact, they did use ES&S machines.</p> <p>8 A I will take your word for it.</p> <p>9 Q But Professor Stewart didn't know that, didn't challenge him on that; did he?</p> <p>10 A I'm not aware. I wasn't paying that careful attention.</p> <p>11 Q Now, if you would find that in three counties in the same election day similar ballot layout led to undervote rates in the attorney general's race of 20 to 25 percent, wouldn't that be strong evidence that ballot layout may be the cause of the undervote in Sarasota County?</p> <p>12 A Only if the other machine was not produced by ES&S. If both machines are the same exact machine, then this condition of having a crowded screen could result in a human factors problem, or it could result in a software problem, and we can't distinguish.</p> <p>13 Q Twenty-five percent in Charlotte County, 21</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>193</p> <p>1 and it operated correctly 100,000 times, would that be significant evidence to you?</p> <p>2 A That would be indicative of something, but it wouldn't be conclusive.</p> <p>3 Q How about 1 million times?</p> <p>4 A The number of votes you cast is irrelevant to its ability to offer sufficient test coverage.</p> <p>5 Q To be certified, isn't it correct that it has to go through 1 million operations without error?</p> <p>6 A That varies from state to state.</p> <p>7 Q Do you know the standards in this state?</p> <p>8 A I understand that Florida is one of only nine states that doesn't require federal certification, and they do it their own way.</p> <p>9 Q Okay. And do you know if ES&S equipment is federally certified?</p> <p>10 A I believe it is.</p> <p>11 Q And it's state certified too?</p> <p>12 A It ought to be before it can be used here.</p> <p>13 Q Now, you stated that you needed both the equipment of ES&S to run parallel tests and the software, to look at the software; correct?</p> <p>14 A That's correct.</p> <p>15 Q And in your report you stated that there are things that you may be able to see in the parallel</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>194</p> <p>1 tests are going to give you indications as to whether</p> <p>2 there would be or wouldn't be a software code problem;</p> <p>3 correct?</p> <p>4 A That's correct.</p> <p>5 Q But you haven't reviewed the results of the</p> <p>6 parallel tests that were conducted November 28th and</p> <p>7 December 1st?</p> <p>8 A My understanding is that the DVDs still</p> <p>9 haven't arrived. So we haven't had the opportunity to</p> <p>10 review that material yet.</p> <p>11 Q You weren't down there to observe the tests</p> <p>12 then?</p> <p>13 A Physical presence would be sufficient. One</p> <p>14 would need to go over the DVDs, and I could offer a</p> <p>15 number of criticisms of how the process was conducted.</p> <p>16 Q --I'm sure you can. Now you are aware that</p> <p>17 Ms. Jennings was allowed to observe and provide input</p> <p>18 pursuant to this judge's direction; correct?</p> <p>19 A That's my understanding.</p> <p>20 Q And are you aware that some of her suggestions</p> <p>21 after the first parallel test were used in the second</p> <p>22 parallel tests?</p> <p>23 A And I believe a number of them weren't.</p> <p>24 Q And are you aware that both candidates were</p> <p>25 allowed to choose the precincts from which machines</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>196</p> <p>1 we would have wanted, and even then they are not</p> <p>2 sufficient to rule out the possibility of a software</p> <p>3 bug.</p> <p>4 Q But you do foresee that they were conducted</p> <p>5 based on the standards set forth by the state and the</p> <p>6 secretary of state; correct?</p> <p>7 A I don't know what you mean by "standards."</p> <p>8 Q Their protocols and their rules as to how to</p> <p>9 conduct the parallel test, whether you agree with them</p> <p>10 or not?</p> <p>11 A The state drafted protocols.</p> <p>12 Q And the state also accepted input from</p> <p>13 candidates?</p> <p>14 A The state took input. What they did with it,</p> <p>15 I'm not so sure.</p> <p>16 Q Now, the next theory that you posit is the</p> <p>17 postelection corruption hypothesis. And to be clear,</p> <p>18 you're not stating that people were bribed; you're</p> <p>19 talking about corruption of data; correct?</p> <p>20 A All of those are possibilities.</p> <p>21 Q Including that people were bribed?</p> <p>22 A Until you rule it out, it's a hypothesis.</p> <p>23 Q You don't have any evidence of that; do you?</p> <p>24 A I don't believe it's very likely.</p> <p>25 Q Nor do you have evidence that there was</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>195</p> <p>1 would be utilized for those tests?</p> <p>2 A And I'm aware that not enough machines were</p> <p>3 used to be a statistical example.</p> <p>4 Q Sir, if you could answer my question first and</p> <p>5 then give your editorial.</p> <p>6 A Restate the question.</p> <p>7 Q Are you aware that both candidates were</p> <p>8 allowed to choose machines -- choose precincts from</p> <p>9 which those machines were pulled?</p> <p>10 A That's correct.</p> <p>11 Q It's correct to say that 40 percent of the</p> <p>12 machines, two out of five, were chosen by Jennings;</p> <p>13 correct?</p> <p>14 A Two out of the five machines were chosen by</p> <p>15 Jennings.</p> <p>16 Q And you are aware, even though you haven't</p> <p>17 read the report, that there were no anomalies found in</p> <p>18 these tests; correct?</p> <p>19 A That's my understanding of the report, but I</p> <p>20 haven't had the opportunity to read it yet.</p> <p>21 Q And it's your testimony that, despite those</p> <p>22 results, there is no greater evidence that it would be</p> <p>23 much less likely that the machines malfunctioned based</p> <p>24 on these results?</p> <p>25 A These -- the tests were not conducted the way</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>197</p> <p>1 corruption of data after the election; correct?</p> <p>2 A We have no evidence to date.</p> <p>3 Q And you said that the recount processes</p> <p>4 already provided provides a check against that form of</p> <p>5 corruption; correct?</p> <p>6 A That's correct.</p> <p>7 Q And then you posit the malicious software</p> <p>8 hypothesis; correct?</p> <p>9 A That's correct.</p> <p>10 Q An intentional, illegitimate modification of</p> <p>11 software or firmware?</p> <p>12 A Yes.</p> <p>13 Q Do you have any evidence that that happened?</p> <p>14 A Not at present.</p> <p>15 Q So the answer is no?</p> <p>16 A We currently have no evidence to support that</p> <p>17 hypothesis.</p> <p>18 Q Okay. Now, sir, you were an expert witness in</p> <p>19 the case of Conroy vs. Dennis; correct?</p> <p>20 A That's correct.</p> <p>21 Q And in that case you were allowed to review</p> <p>22 certain information, but the judge did not allow you</p> <p>23 to review source code; correct?</p> <p>24 A That's correct. No source code was provided</p> <p>25 in that case.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: right;">198</p> <p>1 Q And your position was that, not only should he 2 have given you the source code, but the source code 3 should be public and put up for everybody to view and everybody to examine? A My position is that trade secrecy is not 6 appropriate in elections systems. 7 Q And, therefore, the answer to my question 8 would be yes, you believe it's appropriate that it be 9 published to everyone? 10 A I believe that's appropriate. 11 MR. DeGRANDY: Thank you, Your Honor, nothing 12 further. 13 CROSS EXAMINATION 14 BY MR. LANDA: 15 Q Morning, Your Honor. Morning, Mr. Wallach? 16 A Good morning. 17 Q Now, it's been nearly a decade since you've 18 done any professional programming; is that correct? 19 A That's not correct. 20 Q You've done professional programming the last 21 decade that does not appear on your resume? 22 A My resume discusses my professional 23 consulting, some of which includes professional 24 programming. 25 Q In which languages? ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">200</p> <p>1 Q All right. Now you said you've testified in 2 six voting cases; is that correct? 3 A That's correct. 4 Q How many of those cases were electronic voting 5 cases? 6 A Let's see. All of them. 7 Q And in how many of them did you suggest that 8 the electronic voting system was appropriate or worked 9 correctly? 10 A In the Webb County cases, I suggested that I 11 didn't see any software bugs, although I did discover 12 discrepancies, including test votes that were included 13 in the final tally. 14 Q So you've never seen an electronic -- never 15 testified about an electronic voting that's taken 16 place that you've approved of? 17 A I don't really understand the question. 18 Q Okay. 19 A Perhaps you could restate it. 20 Q Have you ever used an iVotronic machine? 21 A I have never voted on one, though I have 22 operated them. 23 Q You have operated them? 24 A Yes. 25 Q Now, when you operated them, and I want to -- ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: right;">199</p> <p>1 A I have consulted in C and Java, and I've also 2 done some work in languages like Perl. 3 Q Now, Mr. Wallach, is there an electronic 4 voting machine that you advocate? 5 A I'm reasonably happy with ES&S's AutoMark 6 product. I like the electronic precinct-based optical 7 scanners, and I understand that there are a number of 8 other products in development by other vendors that 9 have apparently good properties as well. 10 Q Have you written with approval about any of 11 these? 12 A I'm not sure. 13 Q I didn't notice it on your resume. Can you 14 point it out if it's there. 15 A I discuss some of these systems in my standard 16 talk. And my slides are on my website. 17 Q So you wouldn't find that in your resume; 18 would you? 19 A My resume lists all of the talks that I've 20 given, and the slides from my talk are on my website. 21 Q So I would have to consultant your website to 22 find out if you put in writing anything critical of electronic voting systems? 24 A My website would be a good place to find out 25 about things that I've said. ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">201</p> <p>1 we saw some pictures yesterday, you remember, of what 2 the iVotronic looked like? 3 A Yes. 4 Q When you select a candidate, what happens? 5 A You touch the screen; the software interprets 6 the location of your finger on the screen, and it 7 places an X in the box for the appropriate candidate. 8 Q Is that all? 9 A I imagine that there are a number of things 10 that go on, but that would require examining the 11 source code to find out. 12 Q Well wait a minute. Let's focus on the user 13 experience for a minute. All the user sees is an X in 14 the box? The user doesn't see anything else when he 15 touches the screen? 16 A I'm not certain, and there are several 17 different versions of ES&S's software, and they all 18 behave slightly differently. 19 Q You didn't observe the testing, so you 20 wouldn't actually know what happens on these machines; 21 would you? 22 A Which testing are we referring to? 23 Q Parallel testing that the state did in this 24 case. 25 A I wasn't an observer at the testing. ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: right;">202</p> <p>1 Q So would it surprise you to learn that when a 2 user touches the screen, that the candidate flashes, 3 big blue line behind it, and it's pretty obvious the candidate that was selected, and then the X gets put in the box; would that surprise you?</p> <p>6 A That wouldn't surprise me. 7 Q You've seen that on voting machines; haven't 8 you?</p> <p>9 A Voter machines have a number of ways of 10 indicating how you've selected your vote. 11 Q Well you've operated iVotronic machines. Have 12 you ever seen that flashing before?</p> <p>13 A When I've operated iVotronics, it's been the 14 administrative interface, not the voting interface. 15 Q I see. So you've never operated a machine of 16 the type used in this election in the way it was used 17 in this election?</p> <p>18 A I haven't had the opportunity. 19 Q And nobody told you about this flashing?</p> <p>20 A I don't see how this flashing is relevant. 21 Q We will get to that in a little while. Nobody 22 told you about it; right?</p> <p>23 A Nobody has told me about the flashing feature. 24 Q Can you use an iVotronic machine? Are you 25 capable of doing that?</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">204</p> <p>1 A I don't believe you can assign probabilities. 2 I don't think that that's a meaningful question to 3 ask. 4 Q Okay. Let's talk about what happened in the 5 2006 election in Sarasota County. Now, there were 6 something like 18,000 undervotes; is that correct?</p> <p>7 A That's approximately correct. 8 Q All right. And one of your theories is that a 9 software bug or some malicious code led to some 14,000 10 or so of those undervotes; is that right?</p> <p>11 A That was two different theories, but, yes. 12 Q Some machine malfunction; right?</p> <p>13 A You said software bug or malicious. So that 14 was two separate theories. 15 Q Let me separate those out. Some machine 16 malfunction led to some 14,000 undervotes is your 17 theory?</p> <p>18 A That is one of my theories. 19 Q One of your theories. Now, that's what 20 percentage of the total vote in Sarasota County?</p> <p>21 A Off the top of my head, I seem to recall that 22 that's about 12 percent of the cast votes. 23 Q Now, if you could run an iVotronic like a 24 voter, don't you think you would see some number of 25 undervotes for Ms. Jennings if 10 percent, 12 percent</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: right;">203</p> <p>1 A Yes, I would be capable of that. 2 Q Can you use it just like a Sarasota voter?</p> <p>3 A There are several hundred thousand Sarasota 4 voters who would use it differently. 5 Q Can you use it like a typical Sarasota County 6 voter?</p> <p>7 A I imagine I can. 8 Q Now, can you show manifestations of software 9 bug by testing?</p> <p>10 A Testing can show the presence of bugs, yes. 11 Q And you said that it couldn't prove the 12 absence of bugs; right?</p> <p>13 A That's correct. 14 Q What did you mean "prove"? Do you mean prove 15 beyond any doubt whatsoever?</p> <p>16 A That's what I meant, yes. 17 Q But in a legal sense you weren't using that 18 term?</p> <p>19 A I was using "prove" in the scientific sense. 20 Q So testing could certainly make something more 21 likely than not; couldn't it?</p> <p>22 A Testing can demonstrate beyond a doubt that a 23 problem exists. 24 Q Can testing demonstrate that it's more likely 25 than not that a problem doesn't exist?</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">205</p> <p>1 of the votes showed up as an undervote as part of one 2 of your theories?</p> <p>3 A Maybe, maybe not. It depends on exactly how 4 the procedures were put together. 5 Q So you might not see 10 percent of them. Do 6 you think you would see, you know, some percentage, 7 5,000 undervotes, 2,000 undervotes, some number of 8 undervotes if you reran, 100,000?</p> <p>9 A Maybe, maybe not. 10 Q You might not see any; right?</p> <p>11 A I wouldn't know until I tried. 12 Q So part of your hypothesis might be that on 13 election day the machines worked one way with one set 14 of voters, but if you tested them again on another 15 day, they might not work that way?</p> <p>16 A It could be the case that there is some 17 dependency on the data. 18 Q Now let's talk about that. The machine, the 19 iVotronic machine, where does it get the date?</p> <p>20 A It has an internal clock. It knows what time 21 it is. 22 Q Absolute time?</p> <p>23 A Yes. Actually it does know the absolute time. 24 Q Who tells it what the absolute time is?</p> <p>25 A It's probably configured in the factory, and</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: right;">206</p> <p>1 the county has the ability to change the clock on the 2 machine through the administrative options. 3 Q Do you know if the clocks were changed to election day for the test? 4 A I'm not aware whether they were or weren't. 5 Q Would that affect any of your opinions? 6 A It might; it might not. I would have to look 7 at the software to be able to determine. 8 Q Let's talk a little bit about your malicious 9 code theory. 10 A Uh-huh. 11 Q How do you posit that the malicious code 12 entered the software? Do you posit that it was placed 13 in the firmware or was added after the machine left 14 the factory? 15 A Any of these things are possibilities. 16 Q And do you posit that the malicious software 17 affected only one one race or that it affected 18 numerous races? 19 A Malicious software could be engineered in any 20 fashion. 21 Q Ah. It could be. But I'm talking about in 22 this case. You examined event logs, examined the 23 votes returned. And I'm talking about your theory, to 24 a reasonable degree of professional certainty, about ACCURATE STENOGRAPHY REPORTERS, INC</p>	<p style="text-align: right;">208</p> <p>1 for counties who aren't prepared to do it for 2 themselves. I don't think that's universally true. 3 Q Let's talk about Sarasota County. Isn't it 4 true that the iVotronic machine didn't know anything 5 about the Sarasota County race when they were received 6 by the county? 7 A That should be true. 8 Q Do you have any reason to believe that's not 9 true? 10 A I have no reason to believe it's not true. 11 Q So it would be part of the basis of your 12 opinion to assume that that was true? 13 A I want to be clear. That would be an 14 operating assumption, but that could well be proven 15 false based on evidence that I might observe later. 16 Q But as you're testifying here today, that's a 17 working assumption of yours that you rely on to form 18 your opinions? 19 A I consider the malicious software hypothesis 20 to be less likely than the software bug hypothesis. 21 Q I'm going to go through these one at a time. 22 A Okay. 23 Q We're talking about malicious software now. 24 Do you have any reason to believe -- withdrawn. 25 Is part of the foundation of your opinion that ACCURATE STENOGRAPHY REPORTERS, INC</p>
<p style="text-align: right;">207</p> <p>1 what happened in this case. Let me ask that again. 2 Did the malicious software affect only the race at 3 issue in this case, or did it affect all of the races 4 on those machines? 5 A The malicious software at this point is 6 hypothetical, so I can't say. 7 Q Hypothetically, would you say it affected only 8 one race or many, based on all the data you've 9 reviewed? 10 A It could well have affected other races if it 11 existed. 12 Q But you did not see any other races where you 13 formed an opinion that it affected them? 14 A There is no reason for me to form an opinion 15 until I've had something to examine. 16 Q Well maybe that's what we're here to decide 17 today is whether you need something to examine if 18 you've got no basis. But we will get to that. Let's 19 go back to your malicious code theory. 20 A Okay. 21 Q Now, isn't it true that the iVotronic machine, 2 when it leaves the factory, doesn't know anything about the candidates or the races? 24 A That should be true, although my understanding 25 is that in some cases ES&S preconfigur s the machines ACCURATE STENOGRAPHY REPORTERS, INC</p>	<p style="text-align: right;">209</p> <p>1 when the machines, the iVotronic machines that were 2 received by Sarasota County, they didn't know anything 3 about the race that ultimately was run in Sarasota 4 County in 2006? 5 A They shouldn't have. 6 Q And then -- well isn't it a fact that it's 7 part of your working theory that they didn't? 8 A Yes, it is. 9 Q Okay. Now, isn't it also true that, in order 10 to clear and test, and in order to get a machine ready 11 for a race, that you put a cartridge into that machine 12 which tells the machine about the race? 13 A That's one of several ways to configure the 14 machine. 15 Q How did it happen in Sarasota County? 16 A I haven't had -- I haven't seen their exact 17 procedures. There are several different ways that the 18 machine allows -- there are several different ways 19 that you can do it. 20 Q So your opinion is not based on your knowledge 21 of how this was done in Sarasota County, you're just 22 saying, well, they could have done it in any number of 23 ways? 24 A There are several different ways. 25 Q Okay. Now, let's assume that what Sarasota ACCURATE STENOGRAPHY REPORTERS, INC</p>

<p style="text-align: right;">210</p> <p>1 County did is they loaded up the race as they were 2 setting the machines up. Is that fair? 3 A That would be a reasonable way to do it. 4 Q All right. Let's assume that for now. What happened when the candidates were brought into the 6 machine on this -- from this -- I think you called it 7 a PCB? 8 A PEB. 9 Q PEB. Thank you. From the PEB they're brought 10 into the machine. Aren't they then assigned an index 11 number by the machine? 12 A I believe the index numbers are assigned 13 before it gets to the machine, but yes. 14 Q So each candidate is given an index number? 15 A Yes. 16 Q That's a function of what the PEB looks like, 17 not a function of the software of the machine; right? 18 A The machine interprets what's on the PEB, and 19 it could interpret it in any of a variety of fashions. 20 And I can't know that for certain until I can see the 21 software. 22 Q Well I hear you saying that, but I want to 23 focus you in on the fact that the PEB defines the 24 index number for a candidate, not the machine; right? 25 A It defines it, yes. <p style="text-align: right;">ACCURATE STENOGRAPHY REPORTERS, INC.</p> </p>	<p style="text-align: right;">212</p> <p>1 number of fashions. Malicious software could be 2 engineered to tamper with vote totals. It could be 3 engineered to simply cause machines to fail in 4 unexpected ways. 5 Q Okay. Any anecdotal evidence of machines 6 failing in unexpected ways? 7 A In this particular election, I'm not aware of 8 any such anecdotes. 9 Q We're focused on this election. In this 10 election is there any anecdotal evidence of any memory 11 exception errors? 12 A The anecdotal evidence that might be germane 13 to this is that there is some anecdotal evidence -- 14 I'm answering your question. 15 Q Memory exception errors? 16 A Would you like me to answer your question, or 17 do you want to challenge me? 18 Q I'm making sure you're answering the question. 19 A I am answering your question. 20 Q Is there any anecdotal evidence of memory 21 exception errors; yes or no? 22 A There is evidence of ballots sometimes not 23 appearing on the screen. Now, that could possibly be 24 the result of an internal memory exception, among 25 other things. Something such as a memory exception <p style="text-align: right;">ACCURATE STENOGRAPHY REPORTERS, INC.</p> </p>
<p style="text-align: right;">211</p> <p>1 Q Okay. So that it was entirely within Sarasota 2 County's control whether to put Candidate Jennings at 3 one location and Candidate Buchanan at another 4 location, and the number that they would get to be 5 indexed inside the machine could -- was entirely 6 within Sarasota County's control? 7 A That's approximately true. 8 Q So that if someone were to have tried to put 9 malicious software on the iVotronic machine before it 10 arrived in Sarasota County, they would have to know in 11 advance what the Sarasota County ballot looked like in 12 order to have this malicious software undervote 13 Jennings votes? 14 A That's false. 15 Q Okay. Let's try that one step at a time. 16 A Okay. 17 Q Wouldn't someone writing malicious code have 18 to add, you know, votes or take votes away from a 19 candidate? 20 A That would be one vote of malice. There are 21 others. 22 Q Okay. Okay. So let's get to some of your 23 malice theories. What other malice theories do you 24 have? 25 A Malicious software could be engineered in a <p style="text-align: right;">ACCURATE STENOGRAPHY REPORTERS, INC.</p> </p>	<p style="text-align: right;">213</p> <p>1 error, which is an internal error, could manifest 2 itself in a number of externally-visible ways. 3 Q Frequently by program termination; right? 4 A Including but not limited to program 5 termination. 6 Q Any anecdotal evidence of program termination? 7 A I'm not aware of any such evidence. 8 Q So the malicious software as you posit, you 9 were going through a series of theories as to how 10 this malicious software -- you said it could affect 11 vote totals; right? 12 A Yes. 13 Q But you have to know in advance which index 14 number a candidate would be -- 15 A No, you don't. 16 Q Why not? 17 A That's not true. 18 Q How would you do it to affect a specific 19 race -- let me ask that differently. Isn't it true 20 that to affect a specific race in a specific way, you 21 have to know in advance what the PEB's ballot 22 definition file would look like? 23 A No, you do not. 24 Q Okay. 25 A It's not necessary. I can explain how you can <p style="text-align: right;">ACCURATE STENOGRAPHY REPORTERS, INC.</p> </p>

<p>214</p> <p>1 do it if you would like to know.</p> <p>2 Q No. No. I'm sure you will be able to do</p> <p>3 that.</p> <p>4 And let me just make sure that I have you</p> <p>5 clear, that you are saying that someone could, at the</p> <p>6 factory, for example, write a malicious program that</p> <p>7 would undervote Jennings without knowing what the</p> <p>8 ballot definition file looks like?</p> <p>9 A That's less likely, but it's possible.</p> <p>10 Q Anything is possible; right?</p> <p>11 A I can detail for you exactly how somebody</p> <p>12 would do it if they really wanted.</p> <p>13 Q Anything is possible; right?</p> <p>14 A It could be done with a certain number of</p> <p>15 insiders with certain skills that we could detail if</p> <p>16 you would like.</p> <p>17 Q All right. Are you able to demonstrate</p> <p>18 software bugs in the operation of systems generally?</p> <p>19 A Yes.</p> <p>20 Q And how about bugs that create, say, in excess</p> <p>21 of 10 or 12 percent errors? Are you able to</p> <p>22 demonstrate those in the operative systems?</p> <p>23 A I don't understand your question.</p> <p>24 Q If a bug causes 10 percent errors in the</p> <p>25 calculation or 12 percent errors in the calculation,</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>216</p> <p>1 do that; right?</p> <p>2 A I could construct tests. They may or may not</p> <p>3 be able to reproduce the bug.</p> <p>4 Q Okay. Now, what percentage error was found in</p> <p>5 the parallel testing done by the state?</p> <p>6 A My understanding, based on documents I've not</p> <p>7 yet read, is that they found no errors.</p> <p>8 Q Zero percent?</p> <p>9 A That's my understanding.</p> <p>10 Q All right. Now, if Dr. Stewart is right, how</p> <p>11 many errors should we have seen in the parallel</p> <p>12 testing; that is, you know, according to Dr. Stewart?</p> <p>13 A I can't speak for Dr. Stewart, so I don't know</p> <p>14 what he would say.</p> <p>15 Q Well he attributed some number to machine</p> <p>16 malfunction; I think he said the number was 14,000 for</p> <p>17 the vote?</p> <p>18 A I believe that's what he said.</p> <p>19 Q Something like 12 percent; right?</p> <p>20 A I believe that's what he said.</p> <p>21 Q So that, according to Dr. Stewart, we should</p> <p>22 have seen in the parallel testing about 12 percent,</p> <p>23 which is a pretty large number; right?</p> <p>24 A That would depend how the parallel testing was</p> <p>25 constructed.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>215</p> <p>1 can you demonstrate that?</p> <p>2 A If I can identify the root cause of the bug,</p> <p>3 then I might be able to produce a demonstration of it</p> <p>4 taking effect.</p> <p>5 Q But you don't think that you could demonstrate</p> <p>6 it simply by testing a machine and seeing if the</p> <p>7 machine would evidence that bug?</p> <p>8 A As I've said several times today, testing can</p> <p>9 never prove -- can never prove the absence of a bug.</p> <p>10 Q I understand. But we're talking about votes</p> <p>11 here, not bugs.</p> <p>12 A As I've said several times, by examining a</p> <p>13 source code I might be able to identify the root cause</p> <p>14 of the problem, and that would lead me to be able to</p> <p>15 produce an appropriate demonstration.</p> <p>16 Q Isn't it true that by examining the machine</p> <p>17 you might be able to identify the bug?</p> <p>18 A Depends on the nature of the bug.</p> <p>19 Q I'm sure it does. And how about a bug that</p> <p>20 would occur, say, 12 percent of the time? Don't you</p> <p>21 think by demonstrating -- by testing the machine you</p> <p>22 could demonstrate the existence of a bug that would</p> <p>23 occur more than one in ten times?</p> <p>24 A Depends how you test the machines.</p> <p>25 Q Certainly you would be intelligent enough to</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>217</p> <p>1 Q How many votes were cast in the parallel</p> <p>2 testing?</p> <p>3 A A number roughly equivalent to the number of</p> <p>4 votes that a typical machine would experience in a</p> <p>5 day.</p> <p>6 Q Times five machines, times two days; right?</p> <p>7 A That's correct.</p> <p>8 Q So that would be the number of votes that</p> <p>9 would have been experienced by ten machines in a day</p> <p>10 or something like 500; right?</p> <p>11 A Approximately, yes.</p> <p>12 Q All right. And what's 12 percent of 500?</p> <p>13 A Sixty.</p> <p>14 Q All right. And how many errors were actually</p> <p>15 observed over those 500 cast ballots?</p> <p>16 A My understanding is that they observed no</p> <p>17 errors.</p> <p>18 Q Zero?</p> <p>19 A That's my understanding.</p> <p>20 Q All right. Now, I want to talk a little bit</p> <p>21 about something that I heard you say yesterday where</p> <p>22 you were talking about a calibration problem.</p> <p>23 A Yes.</p> <p>24 Q All right. By "calibration," I guess you mean</p> <p>25 that where you touch the screen might not be</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: right;">218</p> <p>1 reflective of where the machine understands that you 2 touched it; right?</p> <p>3 A That's approximately correct. Q So that if you touch the screen here, the machine might see you touching it down here, that kind 6 of thing.</p> <p>7 A Probably not that gross of an error, but 8 approximately. 9 Q Okay. Maybe that far apart (indicating)?</p> <p>10 A Depends on how the machine is calibrated. 11 There have also been studies that show if, for 12 example, you have your hand where your thumb is 13 touching the screen on one side while you're touching 14 it on the other, that could cause errors. 15 Q I want to talk about this calibration bug. 16 Does it affect your opinion at all if I tell you when someone touches that screen, the candidate flashes?</p> <p>18 A That has nothing to do with calibration. 19 Q Nothing to do with it? You use ATMs? 20 A Yes, I do. 21 Q You ever not see them quite right in 22 calibration?</p> <p>23 A ATMs are often miscalibrated. 24 Q You manage to use them though; right? 25 A Sometimes it's difficult, but, yes.</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">220</p> <p>1 Q No errors were observed in parallel testing. 2 A Okay. 3 Q Do you find that concerning? 4 A I find it to be an interesting data point, but 5 it's not conclusive in any way. 6 Q No, of course not. Now, how many -- you spoke 7 at one point about having to conduct a large number 8 of -- to cast a large number of votes. Do you 9 remember that?</p> <p>10 A Yes. 11 Q And I think when you said "cast a large 12 number," you didn't quantify that. 13 A That's correct. 14 Q How many? 15 A I can't quantify it. The way the process 16 would work is that you would try to assume the 17 behavior of a variety of different voters, whether 18 it's a shaking hand or large fingers or small fingers. 19 You would try a number of different things that 20 weren't considered during the parallel test. 21 Q You didn't say you would have to cast a number 22 of different kinds of votes; you just said a large 23 number. You're now suggesting that what you actually 24 have to do is have different, you know, people operate 25 the test.</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: right;">219</p> <p>1 Q But you get your money out of them when you 2 need it?</p> <p>3 A Yes, I do. 4 Q Okay. Let's talk about another one of your 5 theories, the ballot definition file overloading the 6 machine theory; right?</p> <p>7 A Yes. 8 Q You remember that. You had three theories. 9 You had the malfunction on calibration; you had the 10 volatile to nonvolatile malfunction, which we will 11 talk about in a minute, and you had the ballot 12 definition file overloading the system.</p> <p>13 A That could be a possibility. 14 Q You gave those yesterday as your theories. 15 A Those are some starting theories, yes. 16 Q Those are the ones I heard you testify about, 17 so we will talk about those.</p> <p>18 A Okay. 19 Q Now, definition file overloaded. Now, do you 20 have any basis to suggest that the ballot definition 21 file did in fact overload the iVotronic machine? 22 A Actually I do. 23 Q Okay. Let's talk about that. The same ballot 24 definition file was used in parallel testing. 25 A Uh-huh.</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">221</p> <p>1 A That would be a proper way of conducting a 2 test. 3 Q So you couldn't do it? 4 A That's not my expertise. 5 Q Okay. Now, you talked about a volatile to 6 nonvolatile memory malfunction. 7 A Yes. 8 Q Now, isn't part of the recount process review 9 to make sure that the memories inside the machine 10 match?</p> <p>11 A The recount process doesn't actually consider 12 all the different memories inside the machine. 13 Q Does it consider any of them? 14 A It considers one of them. 15 Q And it makes sure that it matches the totals 16 previously reported? 17 A That's correct. 18 Q Nonvolatile memory is gone; isn't it? 19 A Yes, it is. 20 Q That's the nature of it being nonvolatile? 21 A That's the definition of the term. 22 Q You can't actually know what happened during 23 the election, because that information is gone? 24 A That depends. 25 Q You can't somehow recover the nonvolatile</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>222</p> <p>1 memories that existed during the election?</p> <p>2 A That depends on how the machine behaved and</p> <p>3 whether it might have written something differently</p> <p>4 onto its three different redundant memories.</p> <p>5 Q Wasn't your testimony yesterday that</p> <p>6 nonvolatile memory means that that memory is gone when</p> <p>7 the machine is turned off?</p> <p>8 A That is correct.</p> <p>9 Q Okay. Those machines have all been turned off</p> <p>10 since the election?</p> <p>11 A That's correct.</p> <p>12 Q That's your understanding? Good. Now you</p> <p>13 said when you explained your three theories yesterday,</p> <p>14 your malfunction between the touch and the selection,</p> <p>15 that's the calibration problem --</p> <p>16 A Yes.</p> <p>17 Q -- without discussing the flashing. And you</p> <p>18 discussed the volatile to nonvolatile malfunction, and</p> <p>19 you discussed this ballot definition overload theory.</p> <p>20 You said, when you discussed your three theories, you</p> <p>21 actually had some leads from Dr. Stewart?</p> <p>22 A Yes.</p> <p>23 Q You mentioned one lead; do you remember that?</p> <p>24 A Yes, I did.</p> <p>25 Q Only one. And the one lead you mentioned was</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>224</p> <p>1 miscalibration.</p> <p>2 Q Okay. And that would affect the orientation,</p> <p>3 the orientation of the touch screen vis-a-vis the</p> <p>4 image behind it; right?</p> <p>5 A That's correct.</p> <p>6 Q On every single voting page?</p> <p>7 A Perhaps, perhaps not.</p> <p>8 Q You think the calibration changes from voting</p> <p>9 page to voting page?</p> <p>10 A As I mentioned earlier, the question is not</p> <p>11 the mapping from where you touch to something on the</p> <p>12 screen behind it, but the mapping from where you touch</p> <p>13 to one of the boxes. That mapping is operated in the</p> <p>14 software, and it might vary depending on how many</p> <p>15 boxes there are.</p> <p>16 Q But do you suggest that the candidate that</p> <p>17 flashes is not the same -- the candidate that gets the</p> <p>18 X is not the same candidate that gets recorded?</p> <p>19 A I don't know until I look at the software.</p> <p>20 Q Couldn't one test that? You touch a</p> <p>21 candidate; you see what the software records?</p> <p>22 A One could possibly identify problems, but one</p> <p>23 could never identify the absence of problems.</p> <p>24 Q I understand. You can't be 100.00 percent</p> <p>25 sure of anything. I understand your testimony about</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>223</p> <p>1 that the machines that were cleared and tested later</p> <p>2 had higher undervotes. Do you remember thinking that</p> <p>3 that was a data point?</p> <p>4 A It's an interesting fact, yes.</p> <p>5 Q Statistical anomaly, huh?</p> <p>6 A It's interesting.</p> <p>7 Q All right. Now, how do you explain that</p> <p>8 single machines that were cleared and tested later in</p> <p>9 the process exhibited both higher and lower</p> <p>10 undervotes?</p> <p>11 A The -- my one hypothesis that could explain</p> <p>12 the difference between early and late machine setup is</p> <p>13 that, if calibration is part of the county's</p> <p>14 procedure, they might have been sloppier about</p> <p>15 calibration as they got closer to election day.</p> <p>16 Because in the parallel testing the machines weren't</p> <p>17 operated at normal angle of view, it's difficult to</p> <p>18 make any statements about whether miscalibration would</p> <p>19 be effective or not.</p> <p>20 Q That's excellent. That goes right to your</p> <p>21 calibration theory. That's what I was hoping you</p> <p>22 would tell me, because the calibration theory is the</p> <p>23 one where a person touches the screen, but somehow</p> <p>24 accidentally votes for the wrong candidate; right?</p> <p>25 A That would be one possible effect of</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>225</p> <p>1 that. But my question is, couldn't one touch the</p> <p>2 screen, see which candidate lights up, say, on 500</p> <p>3 votes in parallel testing, and then look at the</p> <p>4 results of that and say, huh, no errors?</p> <p>5 A Without knowing exactly the details of how the</p> <p>6 parallel testing was conducted and how they reconciled</p> <p>7 the errors that naturally occurred during parallel</p> <p>8 testing, I can't really speak to that.</p> <p>9 Q You don't know those details?</p> <p>10 A Because they haven't been made available yet.</p> <p>11 Q You don't know those details?</p> <p>12 A Because they haven't been made available yet.</p> <p>13 Q I'm sorry. You don't know them; right?</p> <p>14 A Yes, I don't.</p> <p>15 Q And you didn't go to the parallel testing to</p> <p>16 watch what happened?</p> <p>17 A That wouldn't have been helpful in this</p> <p>18 regard.</p> <p>19 Q In any regard; right?</p> <p>20 A In this specific regard.</p> <p>21 Q Okay. Let's talk about voter abstention, one</p> <p>22 of your theories. Do you remember you had a theory</p> <p>23 that voter abstention, you know, may have accounted</p> <p>24 for some of the anomaly?</p> <p>25 A That's correct.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>226</p> <p>1 Q All right. And you said that it's unreliable 2 to do a telephone poll; right?</p> <p>3 A That's correct. Q Because people will lie to support their candidate; that's what you said?</p> <p>6 A People can. 7 Q People can lie?</p> <p>8 A Yes. 9 Q That's what you said, lie; right?</p> <p>10 A That is something people can do. 11 Q To support their candidate, that's why you 12 said they might lie?</p> <p>13 A That's correct. 14 Q Let me focus in. If someone in the election 15 voted for Jennings, and you called them up and said, 16 can you tell me who you voted for, how could they lie 17 to support their candidate?</p> <p>18 A For that particular question -- the issue is, 19 if you were surveying them to ask whether they saw any 20 of the issues that have been discussed earlier, such 21 as disappearing, you know, not seeing, things like 22 that.</p> <p>23 Q Let's focus on undervote. How could a person 24 asked if they voted for Jennings lie to support their 25 candidate?</p> <p>ACCURATE STENOTYPE REPORTERS, INC.</p>	<p>228</p> <p>1 A I want to get this correct. Somebody who 2 supports Buchanan, it would be in their interests to 3 say that they experienced no problems, even if in fact 4 they did experience a problem.</p> <p>5 Q Well if they believe they voted for Buchanan, 6 regardless of any problems they may have experienced 7 in getting there, if they believe they voted for 8 Buchanan, they couldn't really lie to support their 9 candidate; could they?</p> <p>10 A They could lie to support Buchanan by stating 11 that they experienced no problems if in fact they did 12 experience problems.</p> <p>13 Q But with the question of who they voted for, 14 in other words, if we're trying to determine the 15 number of undervotes, and we asked people who voted 16 for Jennings whether or not -- who they voted for, and 17 they said, I voted for Jennings, how could they lie to 18 support their candidate in terms of us trying to 19 determine what the undervote was?</p> <p>20 A The issue in the undervote concerns whether 21 the machines malfunctioned. And falsifying statements 22 about observable malfunctions is how they could lie.</p> <p>23 Q Okay. So let me ask maybe the simplest 24 question of all. If someone intentionally 25 undervoted --</p> <p>ACCURATE STENOTYPE REPORTERS, INC.</p>
<p>227</p> <p>1 A They might state that everything they saw 2 appeared normally, as it was meant to.</p> <p>3 Q And that would be a lie to support Jennings?</p> <p>4 A I'm sorry. The lie to support Jennings would 5 be stating that they saw problems with their vote 6 being counted properly.</p> <p>7 Q Well they couldn't tell how their vote was 8 counted; could they?</p> <p>9 A They can't tell how their vote is counted, but 10 they can observe anomalies in the machine's visible 11 behavior.</p> <p>12 Q So someone who voted for Jennings might lie 13 and say that their vote wasn't recorded properly?</p> <p>14 A That is a possibility.</p> <p>15 Q Okay. What about someone who voted for 16 Buchanan? How might they lie to support their 17 candidate?</p> <p>18 A They might lie to say that they experienced no 19 problems, when in fact they did experience a problem.</p> <p>20 Q But it goes back to, if someone believes they 21 voted for Buchanan, they would say that they voted for 22 ? Buchanan; right?</p> <p>23 A Not necessarily. It might be in their 24 interests to say that they experienced --</p> <p>25 Q In their interests?</p> <p>ACCURATE STENOTYPE REPORTERS, INC.</p>	<p>229</p> <p>1 A Yes. 2 Q -- and according to the election results, 3 there were 18,000 undervotes. If someone abstained; 4 you call that an undervote, how could they lie to 5 support their candidate?</p> <p>6 A If somebody is abstaining, then they don't 7 have a candidate to lie to support.</p> <p>8 Q That's right. They couldn't lie to support 9 their candidate, because they don't have a candidate 10 to support.</p> <p>11 A Uh -- actually that's not true. 12 Q Ah, okay.</p> <p>13 A Somebody who chose on election day to abstain 14 might have changed their opinion subsequent to 15 election day and could then strategically lie to a 16 surveyor.</p> <p>17 Q I see. So your theory of why telephone polls 18 to determine how many people undervoted would be 19 unreliable is because all the people who undervoted on 20 election day intentionally have since decided they 21 want to support a candidate and realized that that's 22 what this poll will do and will lie?</p> <p>23 MR. COFFEY: Your Honor, I object. We didn't 24 discuss telephone polls on direct. And we're going 25 on and on about telephone polls.</p> <p>ACCURATE STENOTYPE REPORTERS, INC.</p>

<p style="text-align: center;">230</p> <p>1 THE COURT: We've been into telephone polls; 2 you didn't object before. You can't object now. 3 Answer the question. 4 THE WITNESS: I'm sorry. Could you restate 5 the question? 6 (Pending question read). 7 A I can't make any statement as to how many 8 voters will or will not choose to strategically lie to 9 a phone surveyor. 10 BY MR. LANDA: 11 Q Now you suggest that instead of doing a poll, 12 that we use some form of demographic data to fill in 13 the gaps; right? 14 A Which is what Dr. Stewart did. 15 Q That's what you suggest in your report. 16 A Yes. 17 Q Let's talk about demographic data. Which 18 county would you suggest using to fill in these gaps? 19 A It would be more complicated than that. And 20 this really isn't my specialty. 21 Q It's in your report. I'm trying to understand 22 the basis -- 23 MR. COFFEY: Your Honor, the report was not 24 presented in part of his direct examination. They 25 now want to go into what was a direct on computer ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">232</p> <p>1 be one of many ways that you could try to fill in the 2 blanks. 3 But, again, this is something that political 4 scientists do for a living, and I don't. So I am just 5 presenting a very -- my broad understanding of how 6 political scientists do what they do. 7 BY MR. LANDA: 8 Q So you have no opinion as to how you would 9 select that data? 10 A That's not really what I do. 11 Q You are aware Buchanan won all of the other 12 counties other than Sarasota County? 13 A What happened in the county is irrelevant to 14 what happened in particular precincts. 15 Q I'm sorry. You are aware that Buchanan won 16 all of the other counties other than Sarasota County? 17 A I am aware of that. 18 Q And the data you would take from that county, 19 that would be just undervote data, not election result 20 data? 21 A As I've said before, this is not my specialty. 22 What you would do is that you would most likely look 23 at the vote totals by precinct, and you would try to 24 match precincts and, you know, where possible, 25 between, you know, from -- demographically. ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: center;">231</p> <p>1 science issues, and to I guess what is a human 2 factors or demographic analysis, which he did not 3 testify about. I simply think it's beyond the 4 scope of the direct. 5 MR. LANDA: Your Honor, this goes directly to 6 the foundation that sits beneath the witness's 7 testimony of his necessity to review the code; that 8 is, his theories of how the code is going to assist 9 him. 10 THE COURT: I will allow it, counsel. 11 THE WITNESS: Could you please restate the 12 question? 13 MR. LANDA: Madam Reporter, can you read that 14 back, please. 15 (Pending question read). 16 BY MR. LANDA: 17 Q Which county would you use to fill in the 18 gaps? 19 A You wouldn't go county to county. You would 20 go precinct to precinct, try to do what's called I 21 believe precinct matching, where you try to identify 22 precincts of comparable demographics, and you would 23 look for such precincts outside of -- outside of 24 Sarasota County that had demographics comparable to 25 the precincts inside Sarasota County. And that might ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">233</p> <p>1 Q Is it your understanding that you can use 2 demographics to predict the outcome of an election? 3 A That's a very broad question, and that's not 4 my -- I don't really have the experience to be able to 5 answer it. 6 Q You weren't around in 1948 when the paper said 7 President Dewey? 8 A I'm aware of the Dewey defeats Truman 9 photograph was -- resulted telephone polls that were 10 conducted at the time predicted that Dewey would win 11 in a landslide, when in fact Truman won. 12 Q My question is, you weren't around then? 13 A I was not around then. 14 Q Now, do you have any idea -- I'm going back to 15 the idea that in your report you suggested casting a 16 large number of votes. Do you have any idea what you 17 would expect to see if you casted a large number of 18 votes? 19 A A scientist doesn't have expectations. You 20 collect the data and see what the data has to say. 21 Q Do you have any evidence, as you sit here 22 today, that a software bug changed votes in the 23 Congressional District 13 race in the 2006 election? 24 A I have -- I have -- I do have evidence that 25 suggests that some of the anecdotal descriptions of ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: right;">234</p> <p>1 visible problems of the display might be factual.</p> <p>2 Q Visual problems on the display might be</p> <p>3 factual.</p> <p>4 A That's what I said.</p> <p>5 Q Do you have any evidence that a software bug</p> <p>6 changed votes in the Congressional District 13 race in</p> <p>7 the 2006 election?</p> <p>8 A I have evidence that is suggestive of that.</p> <p>9 Q And that's anecdotal evidence?</p> <p>10 A No, it's not.</p> <p>11 Q It's not?</p> <p>12 A Would you like me to describe it for you?</p> <p>13 Q Well I suspect you will anyway, but I thought</p> <p>14 you did on direct; did you not?</p> <p>15 A I did not.</p> <p>16 Q Okay. Then that's fine. How many counties do</p> <p>17 you think, or how many precincts do you think were</p> <p>18 affected by the software bug?</p> <p>19 A I don't know.</p> <p>20 Q How many races were affected?</p> <p>21 A I don't know.</p> <p>22 Q You didn't do any of that analysis; right?</p> <p>23 A That's not -- that's what Dr. Stewart did.</p> <p>24 Q But all that data is available to you; right,</p> <p>25 the number of counties, the number of races that might</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">236</p> <p>1 and have a complete report.</p> <p>2 Q You need to figure out which buffer you're</p> <p>3 trying to see if it overflowed; right?</p> <p>4 A I don't understand -- your question is</p> <p>5 incomplete.</p> <p>6 Q You're talking about latent buffer overflow.</p> <p>7 What buffer are you talking about?</p> <p>8 A There are numerous buffers throughout any</p> <p>9 piece of software.</p> <p>10 Q So you have no idea?</p> <p>11 A It actually doesn't matter.</p> <p>12 Q Doesn't matter. It could be any buffer?</p> <p>13 A A buffer overflow of any buffer could result</p> <p>14 in some of the paper we've seen.</p> <p>15 Q Could potentially. Is there a statistical</p> <p>16 number you have for that, like .01 percent or</p> <p>17 something?</p> <p>18 A The statistic I have is 18,000 undervotes.</p> <p>19 Q Yes, yes, which you can't reproduce; right?</p> <p>20 A Haven't had an opportunity to try.</p> <p>21 Q Which the parallel testing did not reproduce?</p> <p>22 A Parallel testing did not reproduce.</p> <p>23 Q Can you test for buffer overflows? Can you</p> <p>24 test the machine for buffer overflows?</p> <p>25 A You can test software for buffer overflows.</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: right;">235</p> <p>1 have been affected?</p> <p>2 A Yes.</p> <p>3 Q All right. Now, I take it you have no opinion</p> <p>4 on why this alleged bug operated in -- might have</p> <p>5 operated in only a single precinct or a single county</p> <p>6 and in only one race; right?</p> <p>7 A I have suggested before that this could be</p> <p>8 related to the large number of check boxes appearing</p> <p>9 on a single screen.</p> <p>10 Q Okay. You mentioned in your report buffer</p> <p>11 overflow, latent buffer overflow?</p> <p>12 A Yes.</p> <p>13 Q "Latent" meaning something that happens later?</p> <p>14 A No, meaning it's there, but hasn't manifested</p> <p>15 itself yet.</p> <p>16 Q We're talking about buffer overflow; right?</p> <p>17 A Yes.</p> <p>18 Q Can you do tests to see if there is a buffer</p> <p>19 overflow?</p> <p>20 A There are software testing tools that can</p> <p>21 identify possible overflows in software.</p> <p>22 Q First you have to identify which buffer;</p> <p>23 right?</p> <p>24 A There are automated tools that can do this;</p> <p>25 you just feed it in the program and hit the go button</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">237</p> <p>1 Q But you can't test the machine?</p> <p>2 A This is -- buffer overflows are something that</p> <p>3 you can detect by examining software; you can't detect</p> <p>4 by pressing buttons on a screen.</p> <p>5 Q If it's a keyboard or touch screen buffer?</p> <p>6 A A buffer overflow might manifest itself as</p> <p>7 some of the things that we've seen in the anecdotal</p> <p>8 evidence.</p> <p>9 Q Hold on.</p> <p>10 A But you won't see a thing on the screen that</p> <p>11 says buffer overflow.</p> <p>12 Q Hold on. There is a touch screen on the</p> <p>13 iVotronic machine; right?</p> <p>14 A Yes.</p> <p>15 Q That's the principal interface between the</p> <p>16 voter and the machine?</p> <p>17 A Except for disabled voters, but yes.</p> <p>18 Q Okay. For most voters, for non-disabled</p> <p>19 voters, that's the principal interface?</p> <p>20 A Yes.</p> <p>21 Q And there is a touch screen buffer; right?</p> <p>22 A I don't know.</p> <p>23 Q Okay. So you really --</p> <p>24 A Presumably there is.</p> <p>25 Q You really don't know what buffer you're</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: right;">238</p> <p>1 talking about. When you said buffer overflow, you</p> <p>2 said any one of a number of software bugs, including</p> <p>3 buffer overflow. You have no basis --</p> <p>4 A I do have a basis.</p> <p>5 Q Let's focus on that. What buffer are you</p> <p>6 talking about?</p> <p>7 A I can't name the specific buffer.</p> <p>8 Q Can you tell me what the buffer does?</p> <p>9 A I said I can't name a specific buffer.</p> <p>10 Q I'm asking for a function.</p> <p>11 A I can't name a specific function.</p> <p>12 Q Okay.</p> <p>13 A That's why I need to look at the software.</p> <p>14 Q Now you said the testing can never prove the</p> <p>15 absence of relevant software bugs.</p> <p>16 A That's correct.</p> <p>17 Q What did you mean "relevant," the word</p> <p>18 "relevant"?</p> <p>19 A Well, by "relevant," I meant germane to the</p> <p>20 undervote rate observed the Sarasota County.</p> <p>21 Presumably there may be software bugs that aren't</p> <p>22 germane to that undervote rate in Sarasota County.</p> <p>23 Testing couldn't determine the absence of those</p> <p>24 either.</p> <p>25 Q Can you show that something is more likely</p> <p style="text-align: right;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">240</p> <p>1 verification would be very straightforward. And by</p> <p>2 and large we would probably agree with each other.</p> <p>3 Q So that it would be fine to give the source</p> <p>4 code to a different expert, because it's an objective</p> <p>5 standard; right? In other words, experts wouldn't</p> <p>6 disagree about whether or not a program works?</p> <p>7 A I disagree with your characterization.</p> <p>8 Q Okay. So this is just going to create two</p> <p>9 different experts with two different opinions about</p> <p>10 how the software works?</p> <p>11 A I disagree with that as well.</p> <p>12 Q If you found a software bug, could you use it</p> <p>13 to show the number of legal votes for Jennings that</p> <p>14 were rejected?</p> <p>15 MR. COFFEY: I just object, as we have</p> <p>16 consistently, Judge, to attempting to give a</p> <p>17 nonlawyer some question about what's a legal vote</p> <p>18 versus what's an illegal vote. I don't think --</p> <p>19 THE COURT: Rephrase your question.</p> <p>20 BY MR. LANDA:</p> <p>21 Q Sure. If you found a software bug, could you</p> <p>22 use it to show the number of votes cast during the</p> <p>23 2006 Congressional District 13 race in favor of</p> <p>24 Jennings, Jennings, that were rejected?</p> <p>25 A I don't understand what you mean by</p> <p style="text-align: right;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: right;">239</p> <p>1 than not?</p> <p>2 A I don't -- in my world something either is or</p> <p>3 isn't. Likely -- I mean I don't understand what you</p> <p>4 mean by that phrase.</p> <p>5 Q Okay. So it's got to be either is or isn't.</p> <p>6 There is no kind of more likely than not in your</p> <p>7 world; right?</p> <p>8 A When talking about software bugs, either</p> <p>9 they're present or absent.</p> <p>10 Q Let's talk about that now. When -- let's say</p> <p>11 you had access to the software.</p> <p>12 A Yes.</p> <p>13 Q Hypothetically, because I suggest you</p> <p>14 shouldn't. Let's say you had access to it, and let's</p> <p>15 say another expert had access to it. Are you telling</p> <p>16 me there is zero chance the two of you would give</p> <p>17 different factual testimony about -- different expert</p> <p>18 testimony about how that software works?</p> <p>19 A What would happen is, different experts might</p> <p>20 identify different problems, and we could verify each</p> <p>21 other's. If I find a problem, the other expert could</p> <p>22 verify it. If they find a problem, I could verify it.</p> <p>23 Q Is it possible the two of you disagree about a</p> <p>24 problem?</p> <p>25 A If we identify a problem, then the</p> <p style="text-align: right;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">241</p> <p>1 "rejected."</p> <p>2 Q That weren't shown as votes for Jennings.</p> <p>3 A The answer to your question would depend on</p> <p>4 the nature of the particular bug. In some cases a bug</p> <p>5 might have left behind cookie crumbs from which I</p> <p>6 could reconstruct what actually happened; in other</p> <p>7 cases a bug might not leave behind a trail. It all</p> <p>8 depends on the specific bug. I won't know until I</p> <p>9 look.</p> <p>10 Q Bugs leave cookie crumbs?</p> <p>11 A Sometimes they do; sometimes they don't.</p> <p>12 Q Couldn't testing reveal these bugs?</p> <p>13 A Sometimes it might; sometimes it might not.</p> <p>14 Q Let's focus on that.</p> <p>15 THE COURT: Excuse me, counsel. That's the</p> <p>16 fourth time you've gone down that road. Move on.</p> <p>17 MR. LANDA: Thank you, Your Honor.</p> <p>18 BY MR. LANDA:</p> <p>19 Q Do you doubt the accuracy of the parallel</p> <p>20 testing that was conducted by the county?</p> <p>21 A I don't doubt its accuracy. I doubt its</p> <p>22 completeness.</p> <p>23 Q Okay. And in that test, is it correct that</p> <p>24 the input that was given to the Ivotronic machines was</p> <p>25 equal to the output that the machines reported?</p> <p style="text-align: right;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: right;">242</p> <p>1 A That's my understanding, based on documents 2 that I have not read. 3 Q All right. Now, I just want to confirm your understanding of the iVotronic machine itself again. And I know you haven't used it, so maybe you don't 6 have an understanding of it. But to cast the vote, 7 what do you do? 8 A After you've completed the review screen, 9 there is a button on the top that has a red light 10 behind it that has "vote" printed on the surface, and 11 the voter presses the blinking red light. 12 Q Okay. And it's correct; is it not, that the 13 voter can review selection for every race and every 14 ballot measure before casting their vote? 15 A That is the design of the machine. 16 Q That's true; right? 17 A There are -- there is some evidence to suggest 18 there might be problems with that process. 19 Q But they can review their selection for the -- 20 for every race and ballot measure before casting the 21 vote? 22 A If and only if the machine is operating 23 correctly. 24 Q Right. And they can confirm their selection 25 for every race in every ballot measure before casting <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p> </p>	<p style="text-align: right;">244</p> <p>1 you ever seen a bug cause a voting machine to create 2 undervotes for a specific candidate during an election 3 but not show up at all in parallel testing? 4 A I have never seen such a bug before. 5 MR. LANDA: Thank you. 6 MR. LABASKY: No questions, Your Honor. 7 MR. WINSOR: Nothing from the state 8 plaintiffs. 9 THE COURT: Anyone else? Redirect? 10 MR. COFFEY: Yes, Your Honor. 11 REDIRECT EXAMINATION 12 BY MR. COFFEY: 13 Q Professor Wallach, just sort of beginning with 14 the last question, have you ever seen a competitive 15 congressional election in a non-presidential year that 16 had 18,000 undervotes before? 17 A I'm not an expert on the history of 18 congressional elections in this country. But it is 19 certainly an anomalous result. 20 Q And have you ever had the opportunity to 21 review the source code in an undervote controversy in 22 order to find out whether there is a software bug or 23 not? 24 A I have never had any such opportunity. 25 Q With respect to the questions that you heard <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p> </p>
<p style="text-align: right;">243</p> <p>1 their vote? 2 A If and only if the machine is operating 3 correctly. 4 Q Okay. As it was in the parallel testing? 5 A As it appears to have been in the parallel 6 testing. 7 Q Okay. And the iVotronic warns voters when 8 they fail to make a selection for an office or a 9 ballot measure? 10 A If and only if the machine is operating 11 correctly. 12 Q As it was in the parallel testing? 13 A As it appears to have been. 14 Q Okay. And it warns them by placing a red "no 15 selection made"? 16 A That's my understanding. 17 Q Okay. And it shows that red directly beneath 18 the office or ballot measure in question; right? 19 A If and only if the machine is operating 20 correctly. 21 Q The iVotronic machine doesn't permanently 22 record the voter selection until the voter pushes the 23 vote button? 24 A That's my understanding. 25 Q I think I only have one more question. Have <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p> </p>	<p style="text-align: right;">245</p> <p>1 about parallel testing, I think your comment was that 2 it was incomplete? 3 A That's correct. 4 Q And would it have been more complete if the 5 testing had been done by people who did not work for 6 the same agency that had already certified the 7 equipment and the software? 8 A Irregardless of who they work for, I think you 9 would have had -- you would have needed to have a 10 broader selection of voters who would be doing the 11 vote presses. 12 Q And would it have been more complete if you 13 had more than 12 people doing the voting testing who 14 were randomly selected from the public according to a 15 matching demographic profile as opposed to employees 16 of the State of Florida? 17 A I would certainly -- the tests would be more 18 complete if you have broader demographics of the 19 testers. 20 Q Would it be more complete if you used testers 21 who were not employees of the same state agency that 22 was involved in certifying the process? 23 MR. LANDA: Objection, Your Honor. These are 24 all leading questions. 25 THE COURT: They are leading, Mr. Coffey. <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p> </p>

<p>246</p> <p>1 BY MR. COFFEY:</p> <p>2 Q Does it matter whether or not testers were</p> <p>3 used who did not reflect the demographic composition</p> <p>4 of Sarasota? Is that something that matters?</p> <p>5 A That absolutely does matter.</p> <p>6 Q Why?</p> <p>7 A Because different demographics of people might</p> <p>8 exhibit different behaviors. And there was, for</p> <p>9 example, a test that the State of California conducted</p> <p>10 on Diebold machines, where they discovered that one</p> <p>11 particular voter had a habit of dragging her finger on</p> <p>12 the screen, and that one particular voter's behavior</p> <p>13 induced the machine to crash.</p> <p>14 Had they not had a broad demographic of test</p> <p>15 voters, they would never have discovered this</p> <p>16 particular bug in the Diebold system.</p> <p>17 Q Now, is there a difference in the way the</p> <p>18 fingers press to a computer screen when the screen is</p> <p>19 flat as opposed to when the screen is vertical?</p> <p>20 A Absolutely. The angle of touch could have a</p> <p>21 broad impact on how the touch is registered by the</p> <p>22 screen.</p> <p>23 Q If one of the possible bug ticklers was</p> <p>24 somebody resting a thumb on a horizontal screen at the</p> <p>25 same time they pressed a button, would that kind of</p> <p>ACCURATE STENO TYPE REPORTERS, INC.</p>	<p>248</p> <p>1 sample.</p> <p>2 Q Does it matter, in exploring through physical</p> <p>3 testing, how -- what the sequence and rapidity is of</p> <p>4 finger presses on a screen?</p> <p>5 A Certainly you want to explore the space of all</p> <p>6 possible ways that a voter might interact with the</p> <p>7 voting machine.</p> <p>8 Q Would a script that had longer intervals</p> <p>9 between screen presses in your opinion faithfully</p> <p>10 duplicate election day voting by voters?</p> <p>11 A For some voters, yes; for others, no.</p> <p>12 Q Why no?</p> <p>13 A Because some voters might have -- might touch</p> <p>14 things very rapidly; some voters might have fingers</p> <p>15 that shake. There are a number of conditions you</p> <p>16 could imagine that would not be captured adequately by</p> <p>17 having touches spaced broadly apart.</p> <p>18 Q In your experience, either as a scientist or</p> <p>19 computer operator, has rapid touches of a computer</p> <p>20 screen ever caused things to freeze or otherwise</p> <p>21 malfunction?</p> <p>22 A Sometimes crashes my cell phone if I press the</p> <p>23 buttons too fast.</p> <p>24 Q What about simultaneous movements on a</p> <p>25 keyboard; can that have a different effect, or can</p> <p>ACCURATE STENO TYPE REPORTERS, INC.</p>
<p>247</p> <p>1 physical interaction with the screen be replicated in</p> <p>2 a screen that was positioned vertically in front of</p> <p>3 the tester?</p> <p>4 A It would not be replicated.</p> <p>5 Q Do you have any idea why, in doing the</p> <p>6 parallel testing, they used a screen that was</p> <p>7 displayed vertically rather than horizontally the way</p> <p>8 the voters use the screen?</p> <p>9 A I do not know why they chose to do it that</p> <p>10 way.</p> <p>11 Q In your opinion, does that affect the validity</p> <p>12 of the so-called parallel testing?</p> <p>13 A It certainly raises the need to perform new</p> <p>14 tests that would be done closer to how the machines</p> <p>15 were used on election day.</p> <p>16 Q Why do you believe a testing of eight machines</p> <p>17 is more meaningful than the level of testing that was</p> <p>18 already done, where four machines -- four election day</p> <p>19 machines were tested by the secretary of state's</p> <p>20 office?</p> <p>21 A There were nine different ballot styles used</p> <p>22 in Sarasota County. And by having a broader selection</p> <p>23 of machines, you can test all the different ballot</p> <p>24 styles. It also lets you move a larger number of</p> <p>25 voters and get a more statistically significant</p> <p>ACCURATE STENO TYPE REPORTERS, INC.</p>	<p>249</p> <p>1 that trigger some either freeze of the computer screen</p> <p>2 or other species of malfunction?</p> <p>3 A Believe it or not, the keyboard I have on my</p> <p>4 computer sometimes malfunctions in exactly the way you</p> <p>5 describe. I need to get a new keyboard.</p> <p>6 MR. COFFEY: Just a second.</p> <p>7 BY MR. COFFEY:</p> <p>8 Q Does it matter whether the test scripts</p> <p>9 followed in the state audit for CD 13 either never or</p> <p>10 hardly at all used a vote pattern in which a vote for</p> <p>11 Buchanan was entered when screen two first appeared?</p> <p>12 MR. LANDA: Objection, leading.</p> <p>13 THE COURT: I'm going allow it. It takes</p> <p>14 longer to argue it.</p> <p>15 A If there was a miscalibration with the screen,</p> <p>16 then you might have a voter who intended to vote for</p> <p>17 Jennings, but it registered a vote for Buchanan, and</p> <p>18 then the voter would need to correct that. And you</p> <p>19 would need -- and since that probably -- we can assume</p> <p>20 that that happened with some number of voters, that it</p> <p>21 would be something you need to test as part of your</p> <p>22 testing.</p> <p>23 BY MR. COFFEY:</p> <p>24 Q Now during the cross you mentioned that in a</p> <p>25 previous experience you were involved with, you</p> <p>ACCURATE STENO TYPE REPORTERS, INC.</p>

<p>250</p> <p>1 indicated that, even with an open source platform, an</p> <p>2 examination could take years; do you recall that</p> <p>3 testimony?</p> <p>4 A That's certainly possible.</p> <p>5 Q Is the examination, based on your judgment,</p> <p>6 within a reasonable degree of professional certainty,</p> <p>7 necessary to prove or disprove the theory of machine</p> <p>8 malfunction, is that going to take years here?</p> <p>9 A It will not.</p> <p>10 Q And what is your best professional judgment as</p> <p>11 to how long that's going to take?</p> <p>12 A Based on the analysis that we did of the</p> <p>13 Diebold system, where four people spent two weeks</p> <p>14 conducting the analysis, I would anticipate that a</p> <p>15 similar level of effort would produce a similar result</p> <p>16 in this case.</p> <p>17 Q And you were also asked about the fact that in</p> <p>18 the Diebold system there were no confidentiality</p> <p>19 orders in place; do you recall that?</p> <p>20 A That's correct.</p> <p>21 Q And that you have advocated open source code</p> <p>22 for election systems; is that correct?</p> <p>23 A That's correct.</p> <p>24 Q And if you are permitted to examine the source</p> <p>25 code and other components that are considered by ES&S</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>252</p> <p>1 THE COURT: Y'all want to come over here to</p> <p>2 see better, feel free to do so.</p> <p>3 MR. FINLEY: Would it be possible for us to</p> <p>4 obtain paper copies so that we don't have to --</p> <p>5 THE COURT: I don't know if they have paper</p> <p>6 copies.</p> <p>7 MR. CODY: We do. I'm going to introduce</p> <p>8 those into evidence at the conclusion of this.</p> <p>9 THE COURT: It might be quicker -- do you have</p> <p>10 copies for them?</p> <p>11 MR. CODY: Yes.</p> <p>12 THE COURT: If you give it to them now, it</p> <p>13 might go a little quicker.</p> <p>14 MR. CODY: While we're waiting for those to</p> <p>15 get distributed, I'm Stephen Cody, representing</p> <p>16 ES&S. I would like to move into evidence, from our</p> <p>17 appendix we had Exhibits 1 through 6, which have</p> <p>18 been provided with our brief on this issue. I</p> <p>19 would like to move those into evidence at this</p> <p>20 time.</p> <p>21 I can provide the court with additional</p> <p>22 copies. We've already filed them with the court as</p> <p>23 part of our submission. So whatever is the court's</p> <p>24 pleasure.</p> <p>25 No. 1 is page 42 of the hearing that was held</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>251</p> <p>1 to be its trade secrecy, are you going to ignore Judge</p> <p>2 Gary's order because you think in a perfect world the</p> <p>3 public should have greater access to voting</p> <p>4 technology?</p> <p>5 A I will obey any order of the court.</p> <p>6 MR. COFFEY: Nothing further.</p> <p>7 THE COURT: Thank you. You may step down.</p> <p>8 MR. LANDA: Your Honor --</p> <p>9 THE COURT: Nothing new was gone into.</p> <p>10 MR. LANDA: Thank you, Your Honor.</p> <p>11 THE COURT: You may step down.</p> <p>12 Have any other witnesses, Mr. Coffey?</p> <p>13 MR. COFFEY: No, Your Honor.</p> <p>14 MR. CODY: Your Honor, I would ask to have</p> <p>15 Professor Lewis go over to the computer terminal.</p> <p>16 We're going to be putting a number of slides on</p> <p>17 that --</p> <p>18 MR. DeGRANDY: Your Honor, if we could have</p> <p>19 five minutes to set up.</p> <p>20 THE COURT: Why don't you take ten minutes.</p> <p>21 Be back at quarter of by that clock.</p> <p>22 (Short recess).</p> <p>23 THE COURT: Okay. If you can't see, move the</p> <p>24 chairs or come join the cameramen if you want.</p> <p>25 MR. HERRON: I'm all right.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>253</p> <p>1 in this matter. No. 2 is the November 30th public</p> <p>2 statement issued by Sue Cobb regarding the parallel</p> <p>3 tests. No. 3 is certificates issued by the Florida</p> <p>4 Department of State concerning the certification of</p> <p>5 Unity 2.4.4. No. 4 are certificates issued -- and</p> <p>6 both of those, 3 and 4, are under seal --</p> <p>7 certificates issued by the state for Unity 2.4.2.</p> <p>8 Five is an advertisement by the Sarasota County</p> <p>9 supervisor of elections regarding the logic and</p> <p>10 accuracy testing of the voting tabulation equipment</p> <p>11 that was scheduled on October 20th, 2006.</p> <p>12 And 6 are the certified results of the logic</p> <p>13 and accuracy testing issued by the canvassing board</p> <p>14 of Sarasota County. I would move all of those into</p> <p>15 evidence.</p> <p>16 THE COURT: Any objection?</p> <p>17 MR. HIRSCH: No objection.</p> <p>18 MR. LANDA: No objection, Your Honor.</p> <p>19 THE COURT: So received.</p> <p>20 (ES&S's Exhibit Nos. 1 through 6 were</p> <p>21 identified for the record and received in</p> <p>22 evidence).</p> <p>23 MR. CODY: As No. 7 we would move in a</p> <p>24 certified copy of the results of the parallel</p> <p>25 testing, which was issued on December 18th, 2006 by</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: right;">254</p> <p>1 the Bureau of Voting Systems Certification of the 2 Florida Department of State, Division of Elections. 3 MR. HIRSCH: Objection, Your Honor. 4 MR. FINLEY: Objection. 5 THE COURT: What basis? 6 MR. HIRSCH: The relevant hearsay objections 7 for public records and reports expressly doesn't 8 cover records that contain evaluations or 9 statements of opinion by public officials. Florida 10 Supreme Court case, Lee v. Department of Health and 11 Rehabilitative Services, which I'm happy to hand up 12 to the court, expressly says, in Florida rather 13 than offering this type of record, a witness must 14 be called who has personal knowledge of the facts. 15 Under the federal rules this might be 16 admissible. Under the public records exception of 17 Florida, it expressly doesn't have that exception. 18 It's limited to other types of public records. 19 This is not one of them. 20 MR. FINLEY: Your Honor, I would add that, as 21 defense counsel argued repeatedly yesterday, when 22 they believed that they were not allowed a live 23 witness that they could cross-examine. This report 24 doesn't even have an author. It indicates by 25 initials that it may have been composed by David ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">256</p> <p>1 MR. HIRSCH: (Tendering document). 2 THE COURT: This was issued by the Department 3 of State; correct? 4 MR. CODY: Yes, sir. 5 THE COURT: This case cited here relates to 6 factual findings as a result of determining an 7 investigation made pursuant to authority granted by 8 law. I believe what they have there is a 9 certification from the Department of State, who is 10 not only authorized, but is the one agency that can 11 issue those things and the only agency that can 12 certify the accuracy of the testing. 13 I'm going to allow it over objection. Your 14 objection is noted. 15 MR. CODY: Thank you, Your Honor. We ask that 16 it be admitted as Exhibit No. 8. 17 MR. HIRSCH: Seven. 18 MR. CODY: Excuse me, Exhibit No. 7. 19 THE COURT: Seven. 20 (ES&S Exhibit No. 7 was identified for the 21 record and received in evidence). 22 MR. CODY: All right. I would now call 23 Professor Michael Herron. 24 Thereupon, 25 MICHAEL CHARLES HERRON ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: right;">255</p> <p>1 Drury, who is the head of the state division's 2 bureau of voting systems certification. But if 3 they're going to rely on this for its facts, for 4 the truth of what's asserted in it, we're certainly 5 entitled to examine the author. 6 MR. CODY: Your Honor, I believe that, one, as 7 a record which is under seal, there is no doubt 8 that this is a record from the department of state. 9 This is completely different from an e-mail which 10 is sent from one person to the other. This is an 11 official declaration by a division of the 12 government of the State of Florida. 13 And, two, it is a compilation of results of a 14 test which happened, which would be similar to 15 election results coming in. We don't require that 16 the supervisor of elections come in to certify the 17 result of any election that is going to be 18 determined by this court. 19 And on that basis, since it is the reflection 20 of official action by the state, we would ask that 21 it be admitted into evidence. 22 MR. HIRSCH: Your Honor, if I may. It's not a 23 question of authentication; it's a question of 24 hearsay. I mean, let me hand up to you -- 25 THE COURT: Let me see it. ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">257</p> <p>1 was called as a witness, having been first duly sworn, 2 was examined and testified as follows: 3 THE COURT: State your full name, spell your 4 last name for the court reporter. 5 THE WITNESS: Michael Charles Herron, 6 H-E-R-R-O-N. 7 DIRECT EXAMINATION 8 BY MR. CODY: 9 Q And, Mr. Herron, where are you presently 10 employed? 11 A I'm an associate professor of government at 12 Dartmouth College. 13 Q And what is your area of academic study? 14 A I have several, but one of my areas is 15 studying of voting irregularities, undervotes, 16 overvotes, and so forth. 17 Q Can you give me a brief rundown of your 18 educational background? 19 A I received a bachelor's from Carnegie Mellon 20 University. I've received a master's in political 21 science from the University of Dayton. I received a 22 master's degree in statistics from Stanford University 23 and a Ph.D. from the graduate school of business at 24 Stanford University. 25 Q What is your Ph.D. in? ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: right;">258</p> <p>1 A A field call political economics, which is at 2 the business school, mathematical political science. 3 Q And at Dartmouth College do you teach courses in political science? A The main courses I teach are in statistical 6 methods and American politics. 7 Q Have you published any academic papers 8 regarding the areas of your -- the focus that you 9 talked to us about? 10 A Yes, I have. 11 Q And can you briefly describe those. 12 A One paper that I have published with coauthors 13 was a study of the butterfly ballot in Florida in Palm 14 Beach County, which we've heard discussed. And 15 another paper was undervotes and overvotes in a 16 variety of counties as well. 17 Q And have you been asked by -- let me ask you, 18 have you looked into the Sarasota 2006 congressional 19 election prior to coming to the courtroom today? 20 A Yes, I have. 21 Q Now, did you begin that work as part of being 22 retained by ES&S? 23 A No, I did not. 24 Q What caused you to begin looking into this? 25 A Two things caused me to become interested in ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">260</p> <p>1 weeks ago. 2 Q And was that after the time you began doing 3 your research in this matter? 4 A Yes. Yes, it was. 5 Q All right. What techniques did you use in -- 6 well first of all, what data did you gather as part of 7 your investigation? 8 A As part of the investigation I've gathered, 9 along with my coauthors in this project, county level 10 data on undervotes, precinct level data from a variety 11 of counties, and ballot level data from a variety of 12 counties as well. 13 Q And what techniques have you used to analyze 14 the data that's been collected? 15 A We have used, and I have used standard 16 statistical techniques to evaluate different theories 17 of the undervote in Sarasota County. We've used 18 regression analyses, and we've used simple cross 19 tabulations, which is a fancy way of saying we've 20 counted to see where undervotes occur. 21 Q And are each of those three techniques that 22 you just described standard techniques that are used 23 within the social sciences? 24 A Absolutely. 25 Q And if another social scientist were to take ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: right;">259</p> <p>1 this project. One, I have an ongoing research project 2 joint with Professor Jeff Lewis of UCLA, in which we 3 are looking at Pasco County, Florida, because we are 4 studying the effects of touch screen data there. The 5 sort of data we're interested in gathering, we thought 6 this case would provide an interesting opportunity to 7 gather more data relative to that touch screen 8 project. 9 The second reason is, on account of my past 10 experiences in studying voting irregularities, this is 11 simply academically interesting, and that motivated my 12 interest as well. 13 MR. CODY: At this point I would tender the 14 professor as an expert on elections and voting 15 patterns. 16 MR. HIRSCH: No objection, Your Honor. 17 MR. COFFEY: No objection. 18 MR. FINLEY: No objection. 19 THE COURT: So received. 20 BY MR. CODY: 21 Q Now, when did -- when were you contacted by 22 representatives of ES&S regarding your involvement in 23 this case? 24 A I believe in my declaration, of which I don't 25 have a copy in front of me, that was approximately two ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">261</p> <p>1 the data that you gathered and apply the same 2 techniques that you applied, would they likely produce 3 the same statistical results? 4 A I believe the answer is yes. 5 Q And so these are tests which could be 6 performed and replicated? 7 A Yes. Absolutely. 8 Q All right. Now, can you tell me, what was 9 your motivation in beginning this review and prior to 10 being contacted by representatives from ES&S? 11 A The motivation was the question -- if I may go 12 to the next slide? 13 Q Sure. 14 A The motivation was a very simple question, the 15 motivating question I should say, which is, what 16 exactly explains the undervote in Sarasota County in 17 the 13th congressional district in Florida. 18 Q And can you tell the court specifically what 19 precinct data you collected in order to do your 20 analysis? 21 A Yes. I'm going to go to the next slide. We 22 gathered data from a variety of counties. Those 23 counties were Broward, Charlotte, Collier, DeSoto, 24 Hardee, Hillsborough, Jackson, Lake, Lee, Manatee, 25 Martin, Miami-Dade, Nassau, Palm Beach, Pasco, ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: center;">262</p> <p>1 Pinellas, Sarasota and Sumter. So when I say we 2 gathered precinct data from those counties, what I 3 mean is that we requested from supervisors of 4 elections offices their precinct level records on how 5 many votes were cast for each race for each candidate 6 and total turnout by precinct. 7 This enables us in general to derive undervote 8 rates by precinct for this list of counties. 9 Q And did you receive this data directly from 10 the supervisors of elections of these various 11 counties? 12 A The supervisors of elections either e-mail the 13 data to us, to me sometimes, sometimes to research 14 assistants, and sometimes they mail it. We received 15 everything from a supervisor of elections office. 16 Q Now, why did you look at other counties 17 besides Sarasota County? 18 A Because, as I will make clear, I believe, the 19 problem that we think affected the undervote in 20 Sarasota County is a generic issue, a generic problem. 21 It is not unique to Sarasota County. In order -- 22 according to good social science methodology, in order 23 to understand what happened in Sarasota County, you 24 have to look beyond Sarasota County. 25 And so that drove our interest in looking at ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">264</p> <p>1 set of ballot images, we know where they were 2 produced. We don't know, obviously because of privacy 3 issues, whether the voter was male or female, for 4 instance, but we know where they came from. 5 Q Can you identify those ballot images to 6 specific machines and specific precincts? 7 A Yes, we can. 8 Q And was that information provided to you? 9 A That information was provided to us. 10 Q And did you take that information into 11 consideration when you did the analysis that you 12 performed? 13 A Yes. 14 Q Okay. Now, approximately how many ballot 15 images have you looked at in the course of doing the 16 analysis? 17 A I'm going to go to the next slide. We have 18 ballot images from the counties listed on the current 19 slide; Charlotte, Collier, Jackson, Lake, Lee, 20 Miami-Dade, Nassau, Pasco, Sarasota and Sumter. As 21 made evident in that slide, this is approximately 22 880,000 ballot images. 23 Q Now, of that list of ballot image data 24 collected and analyzed, do any of those counties 25 besides Sarasota use the ES&S iVotronic machine? ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: center;">263</p> <p>1 this list of counties here, some of which use 2 iVotronic voting equipment, some of which do not. 3 Some of the counties in this list use optical scan 4 voting; some use electronic voting made by 5 manufacturers other than ES&S. 6 Q Okay. Now, what is a ballot image? 7 A A ballot image is a list -- well, a ballot 8 image is a list of candidate choices made by a voter. 9 So, for example, if we have a ballot image from a 10 voter in Sarasota County, that means we have for this 11 particular individual the set of candidates for whom 12 that person cast a valid vote. 13 Q So for voter A, you could look at that ballot 14 image. Could you see how he voted in the senate race, 15 the governor's race, congressional race and any race 16 down the ballot? 17 A That is correct. If we had a ballot image 18 from a particular voter, we would know where this 19 person voted and where he or she undervoted. 20 Q And can you identify who that particular voter 21 is by name or any other characteristic? 22 A We cannot. 23 Q Can you tie those ballot images, though, to 24 specific precincts? 25 A Yes, we can. When a county provides us with a ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">265</p> <p>1 A Yes, they do. Charlotte County uses the 2 iVotronic machine. Collier County uses iVotronics. 3 Jackson County uses iVotronics, so do Lake, Lee, 4 Miami-Dade, Pasco and Sumter. All of them do. We've 5 attempted to get images from other counties that use 6 different manufacturers, and so far none has been 7 provided to us. 8 Q Now, what races did you look at in terms of 9 making the analysis that you performed? 10 A I'm going to go to the next slide. To a broad 11 extent the races that I will focus on today are what 12 we call the top races contested in the election, the 13 2006 election in Florida. So that means the Florida 14 U.S. Senate race, which by law was the first race on 15 every ballot voted in this state. 16 In some cases voters also faced a 17 congressional district race. Obviously the exact race 18 that a voter faced depends on where he or she lives. 19 The third so-called top race is the Florida 20 governor's race, which was faced by every voter in 21 Florida, of course every voter in our sample, along 22 with the attorney general race, the chief financial 23 officer and the Florida commissioner of agriculture. 24 As you can see, the number of candidates for 25 these races varies. For the Florida U.S. Senate race ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>256</p> <p>1 there were six, congressional race obviously varied by 2 congressional race. Florida Governor, there were six 3 candidates also with a write-in possibility; two 4 candidates in the attorney general, which I will 5 generally call the AG race.</p> <p>6 There were two candidates in the chief 7 financial officer race, which I will generally call 8 CFO, and there were two candidates in the agricultural 9 race.</p> <p>10 Q Now, did you have occasion to examine 11 undervoting in any of the races in Sarasota County 12 within Congressional District 13?</p> <p>13 A Did we examine undervoting rate in Sarasota 14 County Congressional District 13?</p> <p>15 Q Right, in other races than the Congressional 16 District 13 race, the Jennings-Buchanan race.</p> <p>17 A Certainly. We looked at undervoting rates in 18 all of these so-called top races. And my analysis, as 19 I will show, ties together undervote rates in a 20 variety of these races.</p> <p>21 Q Well, what did you find?</p> <p>22 A Okay. I would like to first describe what we 23 found in several races.</p> <p>24 THE WITNESS: Your Honor, may I approach the 25 exhibit?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>256</p> <p>1 precincts from Manatee and Hardee County.</p> <p>2 On this graph -- and I will display several in 3 a moment -- all of which have the exact same 4 format, plots the absentee undervote rate in the 5 precinct on the X axis, with the undervote rates, 6 and then the Y axis you can see it says, election 7 day undervote rate.</p> <p>8 This line is a 45-degree line, which basically 9 means that, if a precinct lies right on that line, 10 then the absentee and the election day undervote 11 rates are the same in that precinct. So what you 12 can see from this graph, which is for the U.S. 13 Senate race and CD 13, is that most of the 14 precincts are clustered around the 45-degree line; 15 which is that, broadly speaking, in these precincts 16 the absentee and election day undervote rates are 17 very similar.</p> <p>18 Furthermore, it is quite obvious from this 19 grouping of points that the precincts across the 20 four counties that we are discussing are roughly 21 similar. So there is nothing unusual, when you 22 look at this cluster of points, that make you think 23 that anything is different about any particular 24 county in the U.S. Senate race.</p> <p>25 That's what I mean by all precincts similar, ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>257</p> <p>1 THE COURT: Sure.</p> <p>2 MS. STEELE: Your Honor, if he's going to 3 approach the exhibit, may I sit in the jury box?</p> <p>4 THE COURT: Absolutely.</p> <p>5 THE WITNESS: I would like to start by 6 answering this question by talking about the U.S. 7 Senate race. This graph, which I will explain in a 8 moment, describes precincts in CD 13 that have at 9 least 100 voters, with the exception of DeSoto 10 County, for which we do not have the data that we 11 need to analyze it.</p> <p>12 There are five counties that make up CD 13; 13 Charlotte, DeSoto, Hardee, Manatee and Sarasota.</p> <p>14 MR. CODY: Your Honor, can you see with the 15 witness there?</p> <p>16 THE COURT: I can see fine.</p> <p>17 THE WITNESS: So what you see in this plot 18 right here is a collection of dots. Each dot 19 represents one precinct. The color of these dots 20 denotes the county from which the precinct is 21 generated.</p> <p>22 The purple dots, if you can see in this group 23 right here, denote Sarasota County precincts. The 24 brownish red dots denote Charlotte County 25 precincts, and the sort of bluish dots denote</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>259</p> <p>1 and, furthermore, election day and absentee 2 undervote rates similar, that means clustering 3 around the 45-degree line.</p> <p>4 Now, if we look beyond the Senate race for the 5 CD 13 race, so now we're talking about the CD 13 6 race in the 13th congressional district, we have 7 this same sort of plot, absentee undervote rate on 8 the X axis, election day undervote rate on the 9 vertical axis or Y axis, and the color scheme is 10 the same.</p> <p>11 What you can see here is that the purple dots, 12 which are -- denote precincts in Sarasota County, 13 all of them lie above this 45-degree line. What 14 does that mean?</p> <p>15 That means in Sarasota County in the CD 13 16 race, the election day undervote rates are much 17 larger than the absentee undervote rates. You can 18 see the other counties in this case Manatee, 19 Hardee, and Charlotte, they're all clustered 20 together, and they're clustered on the 45-degree 21 line.</p> <p>22 So the important point of this graph is the 23 contrast between the Senate race, which is, in some 24 sense, strikingly normal, and the congressional 25 13th race, CD 13 race, where all of the sudden, the</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>270</p> <p>1 Sarasota County precincts look very, very 2 different. I should mention that the order of 3 voting in CD 13 was Senate, followed by CD 13. 4 Now, the next graph I'm going to put up shows 5 the third race, which is the Florida Governor's 6 race. Again, this is the order which voters would 7 have seen the races. 8 I will show you the exact same plot, which 9 looks very similar to the U.S. Senate plot. We see 10 in the third race, governor race, that, again, the 11 election day and absentee undervote rates, absentee 12 down here, election day rates over there, are, one, 13 clustered around the 45-degree line, meaning that 14 within precincts in these counties, the election 15 day undervote rates, the absentee undervote rates 16 are basically the same. 17 Furthermore, all the precincts throughout 18 these four counties are basically clustered as 19 well. If you were to compare the governor's race 20 and the senate race, doesn't look particularly 21 different. This race obviously does. 22 The fourth race in CD 13 -- and I say fourth; 23 that means fourth based by all voters -- was the 24 attorney general's race. So I will put up the same 25 sort of plot in the attorney general's race. ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>272</p> <p>1 only eight of them lie within the 13th 2 congressional district. That's why there are only 3 eight points here. However, if you look at 4 Charlotte County as a whole across all of its 80 5 precincts, you find the undervote rate on election 6 day, approximately 25 percent. 7 So the point that I'm trying to make with this 8 slide is that, like the CD 13 race, we see -- this 9 is CD 13 -- a cluster of points that has election 10 day undervote rates much larger than absentee. 11 However, you can see in the AG race, the county is 12 different. 13 Before the anomalous county was Sarasota. Now 14 the anomalous county is Charlotte. 15 BY MR. CODY: 16 Q Now, were you able, as part of your analysis, 17 to look at the way in which the voters within Sarasota 18 County voted on particular ballot patterns? 19 A Yes, we were. We were able to use ballot 20 images, what I've referred to before, to study various 21 patterns. So the reason we decided to do this was 22 because this would suggest, the plots I have put up so 23 far, would suggest there was something very different 24 about the CD 13 race in Sarasota County and about the 25 AG race, the attorney general race, in Charlotte ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>271</p> <p>1 What you can see is something that looks a 2 little bit familiar, which is that, in this race, 3 there are a cluster of points that are high 4 relative to this 45-degree line. These points 5 denote precincts that have very high election day 6 undervote rates relative to absentee undervote 7 rates. 8 Now, when we looked at the CD 13 race in CD 9 13, we observed Sarasota County points up here. 10 Those were purple. Here is the plot. In the 11 attorney general's race, we observe brownish red 12 points. That's Charlotte County. 13 In fact, if you look at these rates between 14 approximately 20 percent and, say, 28 percent, the 15 undervote rate in the election day -- the election 16 day undervote rate in Charlotte County by precinct 17 is in some sense is greater than what you might 18 describe as the mass of these points, which is 19 around, as we know, 14 percent. 20 The undervote rate in Charlotte County and the 21 AG, attorney general's race, was approximately 25 22 percent. These eight points denote the eight 23 precincts in Charlotte County that are also in CD 24 13. 25 Charlotte County has a total of 80 precincts, ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>273</p> <p>1 County. 2 So it is natural to look at how the voters 3 behaved in those races. So I'm now going to put up a 4 series of slides and answer your question directly. 5 I'm going to describe what the slide -- I'm 6 going to describe this slide in general before talking 7 about some specific patterns that we observed in 8 related slides. This is for all Sarasota County 9 voters for whom we have ballot images. This means 10 election day and early voters. 11 There are, I should point out, no ballot 12 images for absentee voters in any of the counties that 13 I'm talking about, these ballot images that we know 14 of, because those voters used optical scan voting. 15 Q Would that be paper ballots? 16 A That means paper ballots. 17 Q All right. 18 A So if you look at these plots, what this plot 19 describes are common profiles or patterns across 20 voters. So consider an individual voter who, for 21 instance, voted Republican in every partisan race in 22 Sarasota County, senate race, CD 13, governor, 23 attorney general, CFO, so forth all the way down. 24 Following the partisan races, there was a sequence of 25 amendments. There is also a sequence of judge ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>274</p> <p>1 retention votes.</p> <p>2 If a voter cast Republican votes everywhere</p> <p>3 and supported all the amendments and the retention</p> <p>4 votes, this voter would be denoted as red with</p> <p>5 Republican than what this color looks like as brown.</p> <p>6 We can look at every single profile cast in Sarasota</p> <p>7 County among election and early day voters and figure</p> <p>8 out which profiles that were the most common.</p> <p>9 What you can see from the graph, this axis</p> <p>10 here denotes number of ballots. There were</p> <p>11 approximately 119,000 ballots cast early on election</p> <p>12 days in Sarasota County. What you can observe is that</p> <p>13 the most common pattern among these ballots was</p> <p>14 Republican -- excuse me -- Republican U.S. Senate,</p> <p>15 Republican CD 13, Republican governors, so forth, then</p> <p>16 on the amendments, yes, yes, yes, yes; judge votes,</p> <p>17 yes, yes, yes, yes.</p> <p>18 This person voted straight ticket Republican</p> <p>19 and yes on the nonpartisan votes.</p> <p>20 Q Let me stop you. You say this person, by that</p> <p>21 bar to the side. Does that mean there were</p> <p>22 approximately 1500 people who voted in that pattern?</p> <p>23 A That is correct.</p> <p>24 Q Okay.</p> <p>25 A So this axis here describes counts. In this</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>276</p> <p>1 senate undervote. What you will notice in contrast to</p> <p>2 the earlier plots is there is a lot of white. People</p> <p>3 who skipped the senate race tended to skip a lot of</p> <p>4 races.</p> <p>5 How can we see that? Well let's look at the</p> <p>6 most common pattern among senate undervoters in</p> <p>7 Sarasota County. That pattern is to vote for the</p> <p>8 governor and nothing else. Okay? That person cast</p> <p>9 undervotes all the way down the ticket -- using the</p> <p>10 word "down," as if we have a physical ballot, but of</p> <p>11 course it's actually sequenced screens. That is a</p> <p>12 common pattern.</p> <p>13 The second most common pattern was to skip the</p> <p>14 senate race, vote on everything else. The third most</p> <p>15 common pattern was to skip the senate race, vote in CD</p> <p>16 13, and vote everywhere else and so forth.</p> <p>17 The point I want to make by this figure is</p> <p>18 that, once you skip the senate race, some of your</p> <p>19 behavior becomes much more predictable. We know that</p> <p>20 people -- from this plot -- people who skip the senate</p> <p>21 race skip lots of races. That is very evident from</p> <p>22 this, and we can tell it because we have ballot image</p> <p>23 data.</p> <p>24 Without ballot image data you can't make plots</p> <p>25 like this, because you don't know the whole sequence</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>275</p> <p>1 case, approximately 1500. So notice these counts are</p> <p>2 stacked in order of their occurrence. So on top is</p> <p>3 the most common. The second line is the second most</p> <p>4 common and third, all the way down.</p> <p>5 This is not the entire set of patterns. These</p> <p>6 are the most common ones. You can see the second most</p> <p>7 common pattern was straight Democrat, following by</p> <p>8 support on all the amendments, following by support</p> <p>9 for all the judge retention votes.</p> <p>10 The thing I would like to point out here is</p> <p>11 the absence of many open circles. These open circles</p> <p>12 denote undervotes. So you can see this pattern down</p> <p>13 here is the second pattern from the bottom, denotes</p> <p>14 the type of voter who voted Republican on all of the</p> <p>15 partisan votes and then undervoted after that.</p> <p>16 So you can see there are undervotes, but they</p> <p>17 are not among the more common -- they do not appear</p> <p>18 among the most common patterns in Sarasota County.</p> <p>19 Now I would now like to make a similar plot,</p> <p>20 but only for voters who skipped the senate race. So</p> <p>21 this is called -- this is the exact same plot for what</p> <p>22 we called senate undervoters. So to make that clear,</p> <p>23 notice that all of these circles are empty.</p> <p>24 Why is that true? Because this plot is only</p> <p>25 for senate undervoters. So of course they have a</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>277</p> <p>1 of votes across a set of races.</p> <p>2 If we now look at CD 13 undervoters, we see a</p> <p>3 very different pattern. So recall the previous chart</p> <p>4 looked at ballot patterns among people who undervoted</p> <p>5 in the senate race. This chart looks at ballot</p> <p>6 patterns among people who skipped the CD 13 race.</p> <p>7 I don't want to use the word "skip" in a</p> <p>8 nonchalant way. What I mean are CD 13 undervoters.</p> <p>9 Notice the CD 13 column here, all those circles are</p> <p>10 empty. They're white. Why is that? Because this</p> <p>11 chart is only for CD 13 undervoters.</p> <p>12 You notice that one very common pattern is to</p> <p>13 undervote only in CD 13 and vote Republican everywhere</p> <p>14 else and support all the amendments, support all the</p> <p>15 judicial retention candidates. Another common</p> <p>16 pattern, the second most common pattern in this graph,</p> <p>17 is to vote Democrat in the senate, CD 13 undervote,</p> <p>18 followed by Democrat all the way down, followed by</p> <p>19 support in the amendments and support in the judges.</p> <p>20 There was one race, charter revision 2 in</p> <p>21 Sarasota County, which did not have a Democratic</p> <p>22 candidate. So strictly speaking, blue does not mean</p> <p>23 Democrat. It means second candidate on the ballot,</p> <p>24 which we can -- which is almost always the Democratic</p> <p>25 candidate, with the exception of that race.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>278</p> <p>1 Q But in a charter revision, where it would be</p> <p>2 yes or no, that would be the second choice on the</p> <p>3 ballot?</p> <p>4 A That is correct. So if you imagine that a</p> <p>5 Democratic voter believed, either chose never to vote</p> <p>6 for Republicans or believed the second option was</p> <p>7 always a Democrat, you would expect to see this sort</p> <p>8 of streak of blue, which in fact we do.</p> <p>9 The main point of this chart, in contrast to</p> <p>10 this one, which was the senate undervote rate, is</p> <p>11 clearly, from this chart, if you were to ask me, here</p> <p>12 is a voter who skipped the senate race, what else did</p> <p>13 he do? I would most likely say he skipped a lot of</p> <p>14 races.</p> <p>15 In contrast, when you look at this race and</p> <p>16 say, here was the voter who undervoted in CD 13, what</p> <p>17 can you tell me about this person's behavior? The</p> <p>18 answer is, it looks like he probably voted in a lot of</p> <p>19 other races.</p> <p>20 So clearly, undervoting in the CD 13 race is</p> <p>21 very different than undervoting in the senate race in</p> <p>22 the sense of predicting behavior in other races.</p> <p>23 Q Professor, let me stop you there. From this</p> <p>24 graph can you draw a conclusion that hitting a</p> <p>25 specific pattern of votes for different candidates is</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>280</p> <p>1 thing for the Democratic races -- excuse me, for the</p> <p>2 Democratic votes and look at all possible patterns.</p> <p>3 We can count the number of occurrences of each</p> <p>4 pattern for the CD 13 undervoters, and we can count</p> <p>5 the number of occurrences of each pattern for the CD</p> <p>6 13 voters. So what this graph displays are counts on</p> <p>7 a scale, to make this reasonable, it's a scale.</p> <p>8 Notice this axis goes to 5,000. This axis goes to</p> <p>9 10,000. That reflects the fact that there were more</p> <p>10 CD 13 voters than undervoters. To make this graph</p> <p>11 readable, we made that scale adjustment.</p> <p>12 We can graph the frequency of each profile.</p> <p>13 And what you observe, each dot represents some</p> <p>14 frequency. So, for example, this red dot here is a</p> <p>15 profile that is mainly Democratic -- excuse me, mainly</p> <p>16 Republican.</p> <p>17 How do we know that? Because we shaded these</p> <p>18 dots in proportion to the number of Republican and</p> <p>19 Democratic votes. So profiles that are reddish are</p> <p>20 Republican. Profiles that are blue are more</p> <p>21 Democratic.</p> <p>22 Notice up here, this particular profile that</p> <p>23 I'm highlighting, straight Republican, denotes -- you</p> <p>24 will notice this is in the upper right-hand corner,</p> <p>25 which means there were many straight Republican votes</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>279</p> <p>1 somehow related to the undervotes in Congressional</p> <p>2 District 13?</p> <p>3 A Let me answer that graph -- that question, by</p> <p>4 going to this graph here. This question reflects a</p> <p>5 conjecture, I believe, that some pattern of votes in</p> <p>6 Sarasota County somehow led to the removal, in some</p> <p>7 fashion, of a CD 13 vote that was correctly cast.</p> <p>8 So how could we check to see if there is some</p> <p>9 sort of magic pattern, as we might want to call it?</p> <p>10 Okay. So let me explain how we can answer that</p> <p>11 question.</p> <p>12 I want to look now at a graph among -- that</p> <p>13 considers top five statewide races, which means</p> <p>14 senate -- excuse me, U.S. Senate, Florida Governor,</p> <p>15 attorney general, CFO and agriculture. I want to look</p> <p>16 at all the possible voting patterns, profiles, for</p> <p>17 those five races in Sarasota County.</p> <p>18 So this includes CD 13 voters and CD 13</p> <p>19 undervoters. And we are looking at the profiles of</p> <p>20 those voters on the top five races. We can, with our</p> <p>21 ballot images, we can look at a particular profile;</p> <p>22 for example, Republican, Republican, Republican,</p> <p>23 Republican, and we can count how many people in CD 13</p> <p>24 voted Republican, Republican, Republican, Republican,</p> <p>25 Republican on the top five races. We can do the same</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>281</p> <p>1 and many straight Republican votes among CD 13</p> <p>2 undervoters and many straight Republican votes among</p> <p>3 CD 13 voters.</p> <p>4 So points that are up here are very common.</p> <p>5 Points that are down here are very uncommon. When I</p> <p>6 say that, what I mean is, points that are up here are</p> <p>7 common in both CD 13 undervoters and CD 13 voters.</p> <p>8 And points that are here are uncommon in CD 13</p> <p>9 undervoters and CD 13 voters.</p> <p>10 In fact, points that are on this line appeared</p> <p>11 in approximately the same frequencies among CD 13</p> <p>12 undervoters and in CD 13 voters.</p> <p>13 Q Now, Professor, do you see the same</p> <p>14 approximate mix of red and blue dots above the</p> <p>15 diagonal line as you do below the diagonal line?</p> <p>16 A Yes. There is no obvious pattern in which we</p> <p>17 see, for instance, all blue or all red either above or</p> <p>18 below or in some unusual-looking pattern in that way.</p> <p>19 Q Would this undercount or undercount, if you</p> <p>20 will, the theory that somehow the machines were taking</p> <p>21 votes on machines that were casting predominantly</p> <p>22 Democratic votes and tossing out the vote for</p> <p>23 Jennings?</p> <p>24 A Yes. So I would like to call your attention</p> <p>25 to this area of the screen right here.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>282</p> <p>1 Q That's the lower right-hand corner?</p> <p>2 A The lower right-hand corner of this screen.</p> <p>3 So you notice it is effectively empty. Let's suppose</p> <p>4 in fact there were a point there. What would that</p> <p>5 point represent?</p> <p>6 This point would be some profile that appeared</p> <p>7 very frequently in CD undervoters, but not frequently</p> <p>8 in CD voters. Why is the absence of such a point like</p> <p>9 that useful? Let's suppose there was some particular</p> <p>10 profile that when you cast it caused your CD 13 vote</p> <p>11 to vanish.</p> <p>12 If that pattern were to happen, we would</p> <p>13 observe lots of that pattern in the CD 13 undervoters</p> <p>14 and not much of that pattern in CD 13 voters. We can</p> <p>15 see there is no such pattern. So what that makes us</p> <p>16 suspect is that there is no magic bullet, as it were,</p> <p>17 that causes -- these among the top five races -- that</p> <p>18 causes -- that a validly-cast CD 13 vote to vanish.</p> <p>19 Q Is there any significance to the relative</p> <p>20 emptiness of the upper left-hand corner?</p> <p>21 A One could make a similar argument about no</p> <p>22 particular pattern causing an undervote to be turned</p> <p>23 into a valid vote. We see no evidence of that either.</p> <p>24 Q Now, what is your summary, after having looked</p> <p>25 through all of this, of your initial findings?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>284</p> <p>1 that particular race; in other words, if you want to</p> <p>2 understand the CD 13 race, you would have to look</p> <p>3 beyond it.</p> <p>4 But that point is emphasized here. No one</p> <p>5 could look, in my opinion, at these plots and say, we</p> <p>6 can ignore the attorney general's race in Charlotte</p> <p>7 County. If anything, when you look at these plots</p> <p>8 that I've put up, I think the natural conclusion is,</p> <p>9 there is something generic about Charlotte County in</p> <p>10 the attorney general's race, and Sarasota County in the CD 13</p> <p>11 race, that makes them look very similar.</p> <p>12 Clearly what this tells us is that any</p> <p>13 analysis that looks only at Sarasota or the 13th</p> <p>14 congressional district will be very incomplete and</p> <p>15 could easily lead to a misleading result.</p> <p>16 Q Did you consider voting confusion as one of</p> <p>17 the causes for the undervote in CD 13?</p> <p>18 A We did. The -- after observing these sorts of</p> <p>19 results, a natural question is, what might explain it?</p> <p>20 As conjectured in newspaper accounts, as I read, there</p> <p>21 were various theories floating around in the immediate</p> <p>22 aftermath and the not-so-immediate aftermath of the</p> <p>23 13th -- of the 2006 election about what exactly caused</p> <p>24 those undervotes.</p> <p>25 One of those theories was voter confusion.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>283</p> <p>1 A Our initial findings pertain primarily to</p> <p>2 Sarasota County, and as I alluded to earlier, a little</p> <p>3 bit of Charlotte County. What we can see, and what I</p> <p>4 believe is undisputed in this court and constructively</p> <p>5 everybody I know, that the CD 13 race in Sarasota</p> <p>6 County was different than the other races in Sarasota</p> <p>7 County.</p> <p>8 We saw that when we compared the CD 13 in</p> <p>9 Sarasota County to the Senate race. We noticed there</p> <p>10 were differences. I alluded to them.</p> <p>11 We also know that the CD 13 race was different</p> <p>12 than other races in CD 13. We saw that because we</p> <p>13 looked at some of those 45-degree plots, and we noted</p> <p>14 that CD 13 race plots looked very different than the</p> <p>15 governor plots and so forth, with one exception, which</p> <p>16 is the attorney general race in Charlotte County.</p> <p>17 If fact, there are obvious similarities</p> <p>18 between the plots that I put up for Sarasota County CD</p> <p>19 13 and for attorney general in Charlotte County. What</p> <p>20 this tells us is that any analysis of the CD 13</p> <p>21 undervote cannot be focused only on Sarasota County or</p> <p>22 on CD 13 in general.</p> <p>23 As I mentioned in an earlier question, social</p> <p>24 science methodology would say, if you want to study a</p> <p>25 particular race, you have to study things that aren't</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>285</p> <p>1 Now it's difficult to measure exactly when we observe</p> <p>2 a confused voter. That's especially true with</p> <p>3 observational data.</p> <p>4 But we can use some intuitive ideas to try to</p> <p>5 think about the sort of voters that might have been</p> <p>6 confused in Sarasota County. So one thing that we do</p> <p>7 is that in Sarasota County I have here on the plot, on</p> <p>8 the left-hand side of this figure, a plot for the U.S.</p> <p>9 Senate race, where each dot in this plot represents a</p> <p>10 precinct. And the location of the precinct on the X</p> <p>11 axis represents the fraction of voters at least 76</p> <p>12 years old in that precinct.</p> <p>13 The Y axis, or the vertical axis, denotes the</p> <p>14 U.S. Senate election day undervote rate. What you can</p> <p>15 see in this figure is a collection of dots. And there</p> <p>16 are two notable features.</p> <p>17 One, these dots are all pretty close to zero,</p> <p>18 which is consistent with what we know, which is that</p> <p>19 many -- the undervote rates in senate races are low.</p> <p>20 The second thing we can see is that this line, which</p> <p>21 is a least squares regression line, is barely sloped</p> <p>22 up.</p> <p>23 This means in precincts with many voters --</p> <p>24 excuse me, in precincts the number of voters age 76</p> <p>25 years and older is not highly correlated with the</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: center;">286</p> <p>1 senate undervote rate. In contrast, I have over here</p> <p>2 the exact same plot --</p> <p>3 Q Professor, before you get there, let me ask</p> <p>4 you about the data that you've got. The X axis on</p> <p>5 that first graph, fraction of voters at least 76 years</p> <p>6 old, where did you get that data from?</p> <p>7 A We purchased this data from a firm called</p> <p>8 Polimetrics. Polimetrics gets the data about voter</p> <p>9 age from what's called the Florida voter file, which</p> <p>10 describes registration status for all voters in</p> <p>11 Florida.</p> <p>12 Q And is the Florida voter file maintained by</p> <p>13 the Florida Department of State as part of its</p> <p>14 official records?</p> <p>15 A Yes.</p> <p>16 Q And does that list every voter demographically</p> <p>17 in the state?</p> <p>18 A Yes, it should.</p> <p>19 Q And is that the kind of data which social</p> <p>20 scientists would normally refer to in doing an</p> <p>21 analysis such as this?</p> <p>22 A Yes. The literature on undervotes and</p> <p>23 overvotes is very interested in studying voter</p> <p>24 demographics, age being one of them and --</p> <p>25 Q I'm sorry to interrupt you. Please go on and</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">288</p> <p>1 the U.S. Senate race only. The second page contained</p> <p>2 CD 13, followed by the governor's race. So I will be</p> <p>3 showing those pictures shortly.</p> <p>4 Q Thank you. Sorry to interrupt.</p> <p>5 Were you able to find other instances of what</p> <p>6 appear to be voter confusion in other races in Florida</p> <p>7 that could help explain this phenomenon?</p> <p>8 A Yes. So I would like to draw your attention</p> <p>9 to the Duval County presidential election in the year</p> <p>10 2000. In Duval County, in 2000 the presidential race</p> <p>11 was spread over two ballot pages. This is widely</p> <p>12 considered to be an example of a confusing ballot</p> <p>13 format, because ordinarily races appear on one ballot</p> <p>14 page only.</p> <p>15 In Duval the opposite happened. There were</p> <p>16 two -- they have candidate names for the presidential</p> <p>17 race, ten candidates in that year, were spread over</p> <p>18 two pages. So you might imagine that this would lead</p> <p>19 to excessive numbers of overvotes. We call an</p> <p>20 overvote is a vote for more than one presidential</p> <p>21 candidate. In Duval County the presidential overvote</p> <p>22 rate was 7.6 percent.</p> <p>23 Nobody argues that overvotes are anything but</p> <p>24 voter confusion. It's impossible to vote for two</p> <p>25 candidates for the same election.</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: center;">287</p> <p>1 tell us about CD 13.</p> <p>2 A Fine. If you look at CD 13, we see a very</p> <p>3 different picture than the U.S. senate race. We see</p> <p>4 fraction of voters at least 76 years old on the X</p> <p>5 axis, on the Y axis the CD 13 election day undervote</p> <p>6 rate. What we notice is in fact points that are</p> <p>7 large. We know that's true, because in Sarasota</p> <p>8 County the undervote rate is high.</p> <p>9 Furthermore, we notice a very steep slope</p> <p>10 here. What does that mean? That means in precincts</p> <p>11 with voters at least 76 years old -- excuse me. What</p> <p>12 this means is that the more voters of at least 76</p> <p>13 years of age in a precinct, the higher the CD 13</p> <p>14 undervote rate.</p> <p>15 Q And that -- can that be an indicator of voter</p> <p>16 confusion, the activities of two -- the same voter set</p> <p>17 in two different elections on the same day?</p> <p>18 A I believe the answer is yes.</p> <p>19 Q Now, with regard to the way in which the</p> <p>20 ballot was laid out, just so that we understand, in CD</p> <p>21 13, how was the U.S. Senate ballot laid out on the</p> <p>22 iVotronics?</p> <p>23 A That varies by county.</p> <p>24 Q But in Sarasota County?</p> <p>25 A In Sarasota County the first page contained</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">289</p> <p>1 So when we observe overvotes, we naturally</p> <p>2 think these voters didn't really know what they were</p> <p>3 doing. So it's not surprising that this overvote rate</p> <p>4 is large. In some precincts the overvote rate was</p> <p>5 over 20 percent.</p> <p>6 Furthermore, of the overvotes, 84 percent of</p> <p>7 them had a punch on each ballot page. So it's as if</p> <p>8 the voter thought the first page of ballots was one</p> <p>9 set of candidates; the second page of names was</p> <p>10 another set of candidates, and voted for one of each.</p> <p>11 If you look at this plot here, we see on the X</p> <p>12 axis, fraction African-American, on the Y axis,</p> <p>13 overvote fraction. The relationship here is obvious.</p> <p>14 There is upward sloping relationship, meaning that, as</p> <p>15 precincts in Duval County had more African-Americans,</p> <p>16 they had more overvotes.</p> <p>17 If we believe African-American is correlated</p> <p>18 with education, socioeconomic status and so forth,</p> <p>19 it's natural to think this is a voter confusion effect</p> <p>20 as well.</p> <p>21 Q This is not to say that the only voters in</p> <p>22 Duval County who overvoted in that election were</p> <p>23 African-Americans?</p> <p>24 A Of course not.</p> <p>25 Q Okay. Did you then develop any theories that</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: center;">290</p> <p>1 you wanted to test concerning ballot format and how</p> <p>2 that might have affected the undervoting in CD 13?</p> <p>3 A Yes, we did. So what we did was, we decided,</p> <p>4 having looked primarily at Sarasota and Charlotte, and</p> <p>5 recognizing there are other well-known cases of voter</p> <p>6 confusion, that there appears to be something to do</p> <p>7 that the undervote rate in CD 13 and in Charlotte in</p> <p>8 the attorney general's race seems to have something to</p> <p>9 do with the way that ballot -- that vote -- that races</p> <p>10 were presented to voters.</p> <p>11 So voters using an IVotronic machine are faced</p> <p>12 with a sequence of pages. These are screens, as was</p> <p>13 mentioned in court earlier. We call each of these</p> <p>14 things effectively a screen shot. I will refer to</p> <p>15 them as pages.</p> <p>16 One thing we know is that, to the best of our</p> <p>17 knowledge, county election officials decide the way</p> <p>18 that races are going to be grouped on ballot screens.</p> <p>19 What we observe in Sarasota is that the undervote rate</p> <p>20 was high when the CD 13 race was paired with the</p> <p>21 governor's race. We don't observe any other high,</p> <p>22 extremely high, top undervote rate -- top race</p> <p>23 undervote rates in Charlotte County.</p> <p>24 In Charlotte County we observe as well that</p> <p>25 the undervote rate occurs when the attorney general</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">292</p> <p>1 A We would expect to see undervoting, but not</p> <p>2 for reasons that we are describing now. Undervoting</p> <p>3 is a well-known phenomenon. We know it increases as</p> <p>4 people move down a ballot. There is no reason to</p> <p>5 think our theory of ballot format effects in any way</p> <p>6 exhausts the type or the way voters can be confused.</p> <p>7 In fact, I'm sure it doesn't.</p> <p>8 Q All right. Now, taking that theory, how did</p> <p>9 you go about testing the theory that you've just</p> <p>10 described?</p> <p>11 A We decided to look at a number of counties</p> <p>12 across Florida that use IVotronic machines. We</p> <p>13 decided to study how -- examine whether there was a</p> <p>14 priming effect by looking at pictures of their screen</p> <p>15 shots. And then we looked to see whether there were</p> <p>16 elevated undervote rates in the places that we</p> <p>17 expected to see them, based on ballot format effects.</p> <p>18 Q Okay. And what did you find with regard to</p> <p>19 Sarasota County?</p> <p>20 A Well let me first step through what Sarasota</p> <p>21 County looked like. I will do this quickly, because</p> <p>22 we've seen it. This is the first page of the Sarasota</p> <p>23 ballot. To the best of our knowledge, this is</p> <p>24 literally what voters saw, minus that mark, which you</p> <p>25 saw earlier today.</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: center;">291</p> <p>1 race is paired with the governor's race.</p> <p>2 So our theory is what we might call a theory</p> <p>3 of ballot format effects, which is that voters are</p> <p>4 primed, if you were, by the initial number of races</p> <p>5 they see on a page.</p> <p>6 So the theory suggests that, if the initial</p> <p>7 page in a ballot has one race, that voters will</p> <p>8 probably expect to see one race on the next page. If</p> <p>9 it starts with two, they will expect to see two.</p> <p>10 This theory suggests that confusion should</p> <p>11 usually occur on the first ballot page that includes</p> <p>12 multiple races or that somehow violates the</p> <p>13 consistency already established. We would expect,</p> <p>14 according to this theory, confusion to be aggravated</p> <p>15 by certain types of voter demographics, because we</p> <p>16 expect that certain voters are more vulnerable to</p> <p>17 being confused.</p> <p>18 And I wanted to emphasize, our theory applies</p> <p>19 to top races only. Of course our theory has nothing</p> <p>20 to do, nothing to say about ballot formats that don't</p> <p>21 appear inconsistent.</p> <p>22 Q When you say they're not inconsistent, if they</p> <p>23 have a single race on every page throughout the</p> <p>24 ballot, would you expect to see undervoting happening</p> <p>25 in those circumstances?</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">293</p> <p>1 These colors were put in by Sarasota County</p> <p>2 officials. This is the first page. It says, page 1</p> <p>3 of 21. This the for the U.S. Senate race. You can</p> <p>4 see it says, United States Senator. You notice there</p> <p>5 are one, two, three, four, five -- six candidates,</p> <p>6 with a write-in position.</p> <p>7 Sarasota County used IVotronics. It is what's</p> <p>8 called a text-style county. There are two types of</p> <p>9 IVotronic formats used, one which is called text</p> <p>10 style; the other is pixel bit map. I will show you</p> <p>11 some pictures of those later.</p> <p>12 The first page in Sarasota County is this.</p> <p>13 The second page is this, which we've also seen</p> <p>14 already. Notice, if we expect to see an unusual</p> <p>15 undervote, it will occur on page 2 --</p> <p>16 Q Why is that?</p> <p>17 A Because here we immediately see violation of</p> <p>18 the consistency established by having one race per</p> <p>19 page. Immediately we see there are two. That theory</p> <p>20 doesn't tell us whether we should see undervote rates</p> <p>21 here or here. But we notice there is an immediate</p> <p>22 violation of consistency right away.</p> <p>23 The third -- the third page contains AG, CFO</p> <p>24 and agriculture races, which you can see right here.</p> <p>25 So this description shows what's on each page and what</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: right;">294</p> <p>1 style of machine and what style of format, either text 2 style or pixel. 3 MR. HIRSCH: Your Honor, the paper versions of the exhibits I have don't seem to have these last few pages. Can I ask if counsel has additional copies of this, or pages? It goes from 19 to 20, but it's not what's on the screen. 6 MR. CODY: They don't appear to be in any of the copies that we have prepared. I will be happy to supply them to the court later. These are -- I believe those first two pages were pages that were put up during your presentation. So -- 13 MR. HIRSCH: The second one was. The first wasn't; the third wasn't. You said you do have an extra copy? 15 MR. CODY: Not here. We will have to have them printed off at the office. These were printed out late last night. Evidently -- 18 THE COURT: How many more pages are there? 20 How many pages do you have? 21 MR. CODY: I do not know. I thought that when we printed this out last night, that the packages that were printed had all of the pages that were -- 23 THE COURT: No. How many pages are in the packet? 25</p> <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: right;">296</p> <p>1 if they have the pages there while your witness is 2 testifying so they can look at those, prepare their 3 cross. How many more witnesses do you have today? 4 MR. CODY: After the professor, we're done. 5 THE COURT: You're done? 6 MR. HIRSCH: Your Honor, if I had a chance to 7 look at the paper ones after he's done, before 8 cross, that would be enough for me. I don't want 9 to interrupt him and the court right now 10 unnecessarily. I do need them before cross, 11 though. 12 THE COURT: I want everybody to be on the same 13 level field. 14 MR. HIRSCH: Can someone be sent out to make 15 those extra sheets? Thank you. 16 MR. CODY: We're going to see that those get 17 printed right now. 18 BY MR. CODY: 19 Q All right. Well, getting back, you were 20 saying that on page 3 of the ballot that was presented 21 to the Sarasota County CD 13 voters, you then had 22 three races shown. Did you look at the layout of the 23 ballot in other counties besides Sarasota County? 24 A We did. 25 Q And what did you find? <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p> </p>
<p style="text-align: right;">295</p> <p>1 MR. THOMAS: Thirty-nine, Your Honor. 2 MR. HIRSCH: The printed versions say we're on 3 19 out of 39. We have another 20 to go. These 4 aren't on there. There must be more than 39 in 5 total. 6 MR. CODY: Well this is on the printout. This 7 is 19 of 39 as well. 8 MR. HIRSCH: Was the one before it also 19 of 9 39? 10 MR. CODY: All right. Please explain. 11 THE WITNESS: The -- I believe that the 12 overlays are dropped out. The way these pictures 13 were generated, this page 3 is overlayed on a 14 previous page. And so I suspect what happens is 15 that the printer only printed out the first page of 16 these ballot pictures -- 17 THE COURT: Okay. How long will it take to 18 make those copies? 19 THE WITNESS: It's just these pages. 20 MR. CODY: How many pages are you talking 21 about? 22 MR. THOMAS: Half an hour, Your Honor. 23 MR. HIRSCH: Appears there are about eight 24 missing pages. 25 THE COURT: It's going to move a lot quicker <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p> </p>	<p style="text-align: right;">297</p> <p>1 A In Charlotte County, here is the first page of 2 the Charlotte County ballot. Charlotte County is an 3 iVotronic county. It's text style, which describes 4 the layout. 5 It is -- the top three pages contain, page 1, 6 the Senate race; page 2, the CD 13 race alone; page 3, 7 the governor race, followed by the attorney general's 8 race underneath. 9 Q And what other counties? 10 A The Pasco County ballot is a two-column 11 iVotronic text-style ballot. You observe two columns. 12 It's iVotronic. The layout is senate to the left, CD, 13 in this case, 5, to the right. The second page of the 14 Pasco County ballot is attorney general -- is two 15 columns as well, as you can see. 16 The left column is governor, followed by 17 attorney general. The right column is CFO, followed 18 by agriculture. So I should mention -- and I will 19 come back to this when I talk about results -- there 20 is some evidence of violating consistency, because on 21 page 1 we have one column per race; page 2 we have 22 two, and then three columns per race. 23 Another county is Nassau. And Nassau, we have 24 an iVotronic county, but this, as you can tell from 25 the format, obviously looks very different than the <p style="text-align: center;">ACCURATE STENOGRAPHY REPORTERS, INC.</p> </p>

<p>298</p> <p>1 sort of pictures we've seen before. This is called 2 the pixel style or bit-map style of iVotronic display. 3 Nassau County is an example of a two-column bit map. 4 It doesn't have to be two-column. This one is. 5 The left column has senator -- excuse me, 6 senate to the left, followed by congressional 7 district, followed by on the right, governor, attorney 8 general, CFO. Page 2 contains commissioner of 9 agriculture, followed by a lot of other races. 10 Our theory would predict that we see no 11 unusual undervote patterns in Nassau County, because 12 there are no violations of priming based on the 13 transition between pages 1 and page 2. You can see 14 here that there are many, many possible candidate 15 buttons. There are seven here, seven here, three, 16 three, and two. 17 There has been some conjecture when you put 18 many buttons on a screen, you get lots of overvotes. 19 Nassau County enables us to see if that irregularity 20 always holds. 21 Another county we have is Miami-Dade. 22 Miami-Dade is particularly important for us. 23 Miami-Dade is iVotronic. It is pixel style. And 24 there is something interesting about Miami-Dade, which 25 is that some precincts in Miami-Dade had a</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>300</p> <p>1 supervisor of elections offices? 2 A Yes. 3 Q All using the same firmware for the iVotronics 4 in each of these instances? 5 A To the best of my knowledge, yes. 6 Q Okay. All right. Now, with regard to the top 7 ballot races, did you -- were you able to calculate 8 any kind of relationship between the undervotes and 9 the effect of age and the effect of having one 10 undervote had -- with undervotes in other parts of the 11 ballot? 12 A Yes. 13 Q Okay. Could you explain what the slide you 14 put up entitled "Sarasota Top Ballot Races" means? 15 A Yes. I would like to summarize our results 16 from Sarasota County with these figures. I will have 17 a number of figures like this for different counties, 18 and I will discuss the ballot format effects as we see 19 them. 20 In this -- notice we have what are called the 21 top ballot races; senate, CD 13, governor, AG, CFO, 22 agriculture. We have various features of the 23 different races in Sarasota County. One is total 24 number of election day and early undervotes, which you 25 can see is 17,825.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>299</p> <p>1 congressional district race, and some did not. 2 So I will show you two versions of Miami-Dade, 3 one version without U.S. House race. The first page 4 contains senate only; the second page contains 5 governor, attorney general, CFO. 6 So according to our theory, this should be 7 confusing, because we go from one race to three races. 8 In contrast, Miami-Dade with U.S. House, which is a 9 set of precincts in Miami-Dade County, there is a 10 congressional district race. Here is an example of a 11 congressional district race. 12 So you see that page 1 contains senate and 13 house; page 2 is the same as we saw before. So our 14 theory says, we should see less confusion now. So 15 this is a very nice test of our theory, because we 16 have a single county. Some voters had one page to 17 start, and then -- had one ballot per page -- had one 18 race per page to start and then were immediately 19 transitioned to three. 20 Some voters saw two to start and one to three. 21 We expect more confusion on the former. 22 Q Now, in Miami-Dade County are all of the -- 23 all of these taking place on iVotronic machines? 24 A Yes. 25 Q And are they all administered by the same</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>301</p> <p>1 This column describes number of undervotes. 2 It is obvious that 17,825 is much larger than any of 3 these other numbers. 4 In addition, this figure -- or this table 5 describes what we call an undervote age slope, which 6 is a slope estimate from a regression at the precinct 7 level of undervote rate on number of voters or 8 fraction of voters that are at least 76 years of age. 9 So when this number is large, that means that 10 precincts with more elderly voters have more 11 undervotes. When this number is zero, it means that 12 there is no such relationship. And when it is small, 13 it means that there is a small relationship between 14 number of elderly voters in a precinct and undervote 15 rate. 16 In addition, these numbers are either black, 17 as these are, when they are statistically significant 18 at conventional competence levels, and they are grayed 19 out otherwise. What you can see here is this slope is 20 .21. The appropriate comparison is between .21 and 21 all these other numbers, which are less than one over 22 twenty, .05. 23 This means that a 10-percent increase in 24 number of elderly voters leads to a 5-percent increase 25 in undervote rates.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>302</p> <p>1 What we see here is that the important 2 comparison is not in the magnitude of these numbers, 3 because we always expect voter confusion to be at work 4 in all elections. What's important is that .21 is 5 much larger in all of these other races.</p> <p>6 So that means the age effect is much larger in 7 CD 13, which we believe to be the confusing race, than 8 it is in any other race. The other rows on this table 9 describe the number of undervotes based on 10 participation in a particular race.</p> <p>11 So one thing we can see, for instance, is 12 that, among these 119,898 votes, there were 28 13 county-wide contests. Of the senate -- in the senate 14 race, each voter either undervoted or voted.</p> <p>15 If the person undervoted, on average this 16 person cast 10.8 undervotes on the remaining set of 17 contests.</p> <p>18 Q So if they undervoted the senate race, on 19 average, they undervoted in 10.8 other races?</p> <p>20 A That's correct. That's consistent with what 21 we showed before, which is, if you skip senate, you 22 probably skip a lot of other things too.</p> <p>23 In contrast, people who vote in the senate 24 race have 2.8 undervotes per race down below. So 25 people who vote in the senate tend to vote in other</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>304</p> <p>1 We see that if you skip the attorney general's 2 race, the odds are you're not going to skip a lot of 3 other races. That's not consistent with the notion 4 that people skip the attorney general's race, just 5 undervoting in general. You can see that people that 6 voted in the attorney general's race voted in most 7 other races. The attorney general's race is anomalous 8 compared to senate, governor, CFO, and agriculture.</p> <p>9 Q What other counties did you look at?</p> <p>10 A Another county we looked at is Collier. I 11 didn't put up a slide for Collier. But I would like 12 to describe the ballot format in Collier County. 13 Collier County's ballot format was just like Martin's.</p> <p>14 We do not have Martin ballot images, which is 15 why I'm talking about Collier only. In Collier 16 County, the first page was the senate race. The 17 second page was the CD race. The third page was the 18 governor's race, and the fourth page was AG, CFO and 19 agriculture.</p> <p>20 So if you expect to see any confusion effects, 21 you would expect to see jumps in agriculture -- excuse 22 me -- in agriculture -- excuse me -- attorney general, 23 which is precisely what we see. Furthermore, we 24 observe that if you skip the CFO race, you are very 25 likely to skip the agriculture race as well.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>303</p> <p>1 races.</p> <p>2 If we look at the CD race, we don't see that; 3 we see people who undervote in the CD race tended to 4 vote in many other races; in other words, 4.7 is a lot 5 smaller than 10.8. Similarly, in the governor's race 6 we observed that, if you skip the governor's race, you 7 skip approximately 10 races down below; you skip the 8 attorney general race. The point is, 4.7 is small.</p> <p>9 All these other numbers are large. Okay?</p> <p>10 In our opinion this points to ballot format 11 effects surrounding the CD 13 race.</p> <p>12 Q Now, did you examine this in other counties to 13 see if this effect also shows up?</p> <p>14 A Yes.</p> <p>15 Q And what were the results of that examination?</p> <p>16 A In Charlotte County we observe a senate top 17 race -- I will drop the CD race here, because in CD -- 18 CD races vary. And as we know, Charlotte included two 19 of them.</p> <p>20 So when I talk about top races, I mean senate, 21 governor and so forth. What you observe is a very 22 large attorney general effect. We see that 11,377 23 election day and early day voters in Charlotte County 24 skipped the attorney general's race; these other 25 numbers, quite smaller.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>305</p> <p>1 Okay. Why is that useful? Because if you 2 remember, the first opportunity in Collier County to 3 be confused would be to hit the race that has AG, CFO, 4 and agriculture, which means your first opportunity to 5 cast a confusion-induced undervote would probably be 6 at CFO.</p> <p>7 If that theory is true, then people who skip 8 CFO should also skip agriculture. In fact, 85 percent 9 of the CFO undervoters also did that, which is very 10 nice.</p> <p>11 You can see that, among the people who skip 12 attorney general, not as many people skip -- not as 13 many people skip CFO, which is consistent with the 14 notion that confusion caused -- the confusion occurred 15 in between attorney general and CFO. And once you 16 were confused at CFO levels, you were probably 17 confused for the remainder of that page too.</p> <p>18 Q And other counties?</p> <p>19 A In Lake County, Lake County I did not display 20 a picture of that either. So I will visually describe 21 that ballot. Lake County is a two-column -- I did 22 Pasco, excuse me. Lake County, like Pasco, is a 23 two-column county. But Lake County is a different 24 format than Pasco in the following sense.</p> <p>25 In Lake County, the first page is senate, next</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: center;">306</p> <p>1 to congressional district, each in one column. The 2 second page has one column with governor, followed by 3 another column with AG, CFO and agriculture. 4 What you see there, we should expect to see 5 very little confusion on this ballot format, which is 6 in fact exactly what we see. If we look at the age 7 correlations, none of them is extremely different, 8 nothing like what we saw in attorney general's cases. 9 If you look at these undervote numbers, you 10 can see that none of them is particularly anomalous. 11 Telling me that a voter skipped a particular race in 12 Lake County doesn't tell me anything about how the 13 person behaved in other races. This is consistent 14 with our theory of ballot format effects. 15 Another county that is important to us is Lee. 16 So Lee is just like Charlotte and, in fact, just like 17 Sumter. So if you look at Lee County, you will notice 18 an enormous undervote in the attorney general's race. 19 So the Lee County ballot looked just like the 20 Charlotte County ballot, which is to say the first 21 race was senate. The second page contained CD only. 22 And the third page had attorney general paired with 23 governor. 24 What do we observe? Enormous undervote in the 25 attorney general's race. We also observed extremely ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">308</p> <p>1 jump at the attorney general race. In fact, that's 2 what we see. We should also see possibly continuing 3 confusion in the CFO race. That's what we see. 4 Observe as well, that if you skip the attorney 5 general's race, 89 percent of those people also -- 6 excuse me -- if you skip the attorney general's race, 7 89 percent of those people also skipped the CFO race. 8 That's consistent with people being confused at the 9 first possible opportunity to be confused and then 10 being confused on the entire page. 11 That's a very notable finding here, and I will 12 discuss that, and that 89 percent figure changes once 13 you put in a U.S. House race. The other important 14 figure to note is that of the -- of the AG 15 undervoters, only 22 percent of them undervoted in the 16 agriculture race. 17 The agriculture race was on the first page of 18 the next screen. Why is that important? That's 19 important because, if the people skipping these races 20 were consistent undervoters, then this number should 21 be large, certainly larger than 22 percent I would 22 argue. 23 So what we see -- and Miami-Dade with no U.S. 24 House, is that if you skip AG, you probably skip CFO 25 as well. And if you undervoted in AG, there is not a ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: center;">307</p> <p>1 large slope estimate between undervote and age, 2 meaning that in Lee County, it appears the confusion 3 effect is correlated with age of voters. And it's 4 exactly what we would expect, given the format of the 5 Lee County ballot. 6 Q Now, was the format of the Lee County ballot 7 similar to the format of the ballot from Charlotte 8 County? 9 A It was, for the top races, identical. 10 Miami-Dade is a county that is extremely important, 11 because of the point I mentioned before, which is that 12 some races in Miami-Dade -- excuse me -- some voters 13 in Miami-Dade faced a congressional race, and some did 14 not. 15 So if our theory of priming is correct, then 16 whether you saw a congressional race should affect 17 down the ticket undervote rates. So I will explain 18 this very carefully, because the logic is slightly 19 subtle in some places. 20 I will first talk about Miami-Dade with no 21 house races. This should be, if anything, the more 22 confusing format in Miami-Dade. The first page in 23 this pixel-based ballot was Senate only; the second 24 page was governor, AG, CFO. 25 So if our theory is right, we should see a ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">309</p> <p>1 strong likelihood you would undervote in agriculture. 2 Remember, agriculture is the beginning of the next 3 page. 4 So I'm now going to show you the results that 5 put on the U.S. House race. This is akin to a 6 treatment. Some voters had a U.S. House race; some 7 did not. In particular, I want to draw attention to 8 these two numbers here, 89 percent, 22 percent. 9 What you see in Miami-Dade is that, once you 10 put in the U.S. House race, that the confusion effect 11 goes down. What we consider the confusion effect goes 12 down. How can we see that? The main way we can see 13 that is that, when we compare 73 percent to the 14 earlier figure of 89 percent, the number is lower. 15 What does that mean? 16 That means if you skipped -- if you undervoted 17 on AG, you are less likely to undervote on CFO if you 18 saw a house race first. You might think that's sort 19 of irrelevant. Why should it matter what house race 20 you saw whether you undervoted or not on CFO? 21 Q Professor, let me ask you, on this ballot, 22 where would the house race have shown up if there was 23 one? 24 A The house race would be right after the senate 25 race. ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>310</p> <p>1 Q On the same page?</p> <p>2 A On the same page. So these voters had less</p> <p>3 priming. They started with two races per page; they</p> <p>4 then changed to three. So you notice there is less</p> <p>5 correlation between undervoting on the second page,</p> <p>6 depending on whether there was a race on the first</p> <p>7 page.</p> <p>8 That's what our theory would predict.</p> <p>9 Furthermore, if you looked at correlation between page</p> <p>10 2 and page 3, that varies as a function of whether</p> <p>11 page 1 had a congressional race. Why does that make</p> <p>12 sense?</p> <p>13 If page 1 had a congressional race, then you</p> <p>14 expect that the people who skipped the AG race are</p> <p>15 just undervoters in general. That's what we find. If</p> <p>16 you undervoted in AG after you saw congressional race,</p> <p>17 you almost certainly -- it's probably .52 that you</p> <p>18 undervoted in agriculture as well.</p> <p>19 That's consistent with ballot format effects,</p> <p>20 that the people who weren't exposed to as much</p> <p>21 priming, when they skip attorney general, that means</p> <p>22 they're undervoting a lot. When you are exposed --</p> <p>23 with you are exposed to priming effects, skipping</p> <p>24 attorney general might mean you're confused. That</p> <p>25 explains your behavior.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>312</p> <p>1 those numbers within a consistent range?</p> <p>2 A Yes. When I said we see nothing, what I mean</p> <p>3 are things like these correlations, relatively</p> <p>4 similar; these numbers, relatively similar. Again,</p> <p>5 it's not surprising that we have correlations here.</p> <p>6 It's not surprising they vary at all.</p> <p>7 We know that -- we have a reasonable idea, I</p> <p>8 should say, that older voters will in general be</p> <p>9 confused on various things. So that's why zeros. But</p> <p>10 if you notice, there is nothing like the attorney</p> <p>11 general's effect we saw in Charlotte. There is</p> <p>12 nothing like the disparities we see in Miami-Dade.</p> <p>13 So our theory predicts we should see no</p> <p>14 format-induced undervote in Nassau. That appears to</p> <p>15 be what we found.</p> <p>16 Q What about in Pasco County?</p> <p>17 A In Pasco County, it is questionable how</p> <p>18 exactly our theory applies.</p> <p>19 Q In Pasco what kind of ballot format did they</p> <p>20 use?</p> <p>21 A So recall in Pasco County it was a two-column</p> <p>22 format. But notice as well in Pasco, there was a</p> <p>23 point I alluded to earlier, which is that both columns</p> <p>24 on page 1 had one vote. Both columns on page 2 had</p> <p>25 two votes. And in fact the second column had three.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>311</p> <p>1 Q What else did you find in terms of other</p> <p>2 counties?</p> <p>3 A In Nassau County, which you will remember was</p> <p>4 a two-column pixel format, we observed nothing, which</p> <p>5 is in fact exactly what our theory suggests we should</p> <p>6 observe. If you remember, Nassau County had the pixel</p> <p>7 version. It was two columns. The first page had</p> <p>8 everything up to agriculture. The second page,</p> <p>9 agriculture plus many other races.</p> <p>10 So what sort of inconsistency was there in</p> <p>11 Nassau? None. That doesn't mean there was no voter</p> <p>12 confusion.</p> <p>13 As I mentioned before, our theory doesn't say</p> <p>14 we have an exclusive understanding of voter confusion.</p> <p>15 I'm sure there are many sources of voter confusion.</p> <p>16 Q I'm sorry. But the undervote age slope</p> <p>17 numbers are similar in range, and the average</p> <p>18 undervote -- excuse me -- average total undervote</p> <p>19 numbers seem to be consistent in range; is that your</p> <p>20 observation?</p> <p>21 MR. HIRSCH: Objection, leading.</p> <p>22 THE COURT: No leading.</p> <p>23 BY MR. CODY:</p> <p>24 Q Are the numbers shown on undervote, dash, age</p> <p>25 slope and under that the undervoters and voters, are</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>313</p> <p>1 So I don't want to push too hard on what our</p> <p>2 theory would apply about Pasco, because the truth is,</p> <p>3 we don't have counties close enough to Pasco to draw</p> <p>4 very strong conclusions. I nonetheless think there is</p> <p>5 some evidence of format-induced undervotes in Pasco.</p> <p>6 If there should be undervotes anywhere, it</p> <p>7 should be on the thing that breaks consistency, which</p> <p>8 would be the second vote in the columns. The second</p> <p>9 vote, if you recall, is senate and governor started --</p> <p>10 excuse me -- senate and CD started. Senate column</p> <p>11 one, CD column two. Governor, top column one;</p> <p>12 attorney general, bottom race in column one.</p> <p>13 Would we expect to see a larger undervote in</p> <p>14 attorney general? Perhaps, if you believe that</p> <p>15 priming is one race per column changing to two.</p> <p>16 Similarly, we observe a jump for agriculture as well.</p> <p>17 Why would that make sense? Agriculture is the</p> <p>18 second in the top race in the column. This is</p> <p>19 consistent that voters are primed by some format,</p> <p>20 although clearly in Pasco, it's more difficult to</p> <p>21 generalize.</p> <p>22 Q Beyond Pasco, you mentioned that Sumter County</p> <p>23 is a county where you observed an effect similar to</p> <p>24 Charlotte. Did you do an analysis there?</p> <p>25 A Yes, we did.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>314</p> <p>1 Q And what did you find?</p> <p>2 A What we find is an enormous undervote effect</p> <p>3 in Sumter in the attorney general's race as well.</p> <p>4 What we see here is 6,560 undervotes for attorney</p> <p>5 general out of approximately 20,000 votes. We</p> <p>6 observe, when you compare attorney general to the</p> <p>7 other races, it's unusual.</p> <p>8 We observe a very, very large slope</p> <p>9 coefficient on elderly voters, "elderly" defined as</p> <p>10 greater or equal to 76 years. Notice as well in</p> <p>11 Sumter, the only place that age is correlated with any</p> <p>12 of the undervote rates is the attorney general race.</p> <p>13 It is not correlated with the other ones.</p> <p>14 Sometimes that pattern holds; sometimes it</p> <p>15 doesn't. In this case it holds nicely. And we notice</p> <p>16 that in Sumter, we would expect Sumter, along with</p> <p>17 Charlotte and Lee, to be the worst examples of</p> <p>18 priming, because there was priming two -- for two</p> <p>19 pages in a row.</p> <p>20 We see, in fact, enormous effects in attorney</p> <p>21 general in those three counties. You also can see the</p> <p>22 standard effects here. If you skip attorney general</p> <p>23 in Sumter, you probably don't skip a lot of other</p> <p>24 races.</p> <p>25 Why does that make sense? That would suggest</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>316</p> <p>1 if they see one one-page ballot first?</p> <p>2 What we would imagine is, the more one-page</p> <p>3 screens you see, the more primed you are. In fact</p> <p>4 that's what this shows.</p> <p>5 Q And beyond Sumter, did you look at any other</p> <p>6 counties?</p> <p>7 A We looked at Jackson County. Jackson County</p> <p>8 is interesting in the way that Miami-Dade is. In</p> <p>9 Jackson County, voters on election day and early</p> <p>10 voting could use both iVotronic and optical scan</p> <p>11 machines. So the way it works, to the best of my</p> <p>12 knowledge, is that in Jackson's 25 precincts, voters</p> <p>13 were given a choice; you may use iVotronic, or you may</p> <p>14 use optical scan.</p> <p>15 The Jackson iVotronic was bit map style. The</p> <p>16 first race contained senate only. The second</p> <p>17 contained attorney general -- excuse me, governor,</p> <p>18 attorney general, and CFO. There was no congressional</p> <p>19 race.</p> <p>20 And furthermore, the third page contained</p> <p>21 agriculture. And I should mention that, according to</p> <p>22 what Jackson County officials have told me, that there</p> <p>23 was one iVotronic per precinct. What this means is</p> <p>24 that, when a voter came to a Jackson County precinct,</p> <p>25 he or she would have the opportunity to use an</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>315</p> <p>1 that the people who skipped attorney general didn't</p> <p>2 really mean to skip attorney general, that there was</p> <p>3 some other process at work. They voted heavily in</p> <p>4 other races.</p> <p>5 In contrast, if you undervote on senate, you</p> <p>6 undervote many, many other races. This, again, is</p> <p>7 very consistent with the story -- the theory of ballot</p> <p>8 format effects that we presented.</p> <p>9 Q Now, can you just remind the court of how the</p> <p>10 Sumter ballot was laid out with regard to the</p> <p>11 placement of the attorney general race?</p> <p>12 A Yes. The Sumter ballot was the same as the</p> <p>13 Charlotte ballot, which was the same as the Lee County</p> <p>14 ballot. When I say "same," I mean with respect to the</p> <p>15 top races only.</p> <p>16 The first page of the Sumter ballot was the</p> <p>17 senate race only. The second page was a congressional</p> <p>18 race only. The third page had governor on top,</p> <p>19 attorney general below.</p> <p>20 So the biggest format effects we believe we</p> <p>21 would expect to see would be in Charlotte, Lee and</p> <p>22 Sumter. That's because it's in some sense reinforced</p> <p>23 priming. When I mentioned before that voters are</p> <p>24 primed, it's natural to say, well, are they primed</p> <p>25 differently if they see two one-page ballots first or</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>317</p> <p>1 iVotronic or to use an optical scan.</p> <p>2 If we would imagine that if there were a voter</p> <p>3 that were intimidated by electronic voting in some</p> <p>4 fashion, that this individual would almost certainly</p> <p>5 choose optical scan voting. We don't know that for</p> <p>6 sure, but that seems relatively intuitive, that if you</p> <p>7 were given a choice, you would pick the one which</p> <p>8 you're most comfortable.</p> <p>9 We also know that, given there was one of</p> <p>10 these and multiple optical scanner machines, that we</p> <p>11 wouldn't expect to see as many iVotronic votes. One</p> <p>12 thing we can do is compare the undervote rates in</p> <p>13 Jackson County for people who used iVotronic machines</p> <p>14 and people who used optical scan voting. Just like in</p> <p>15 Miami-Dade, we have a treatment.</p> <p>16 Some voters were exposed to iVotronics; some</p> <p>17 were not. Then we can look to see whether or not the</p> <p>18 undervote rates vary by those types of machines in a</p> <p>19 way consistent with our ballot format theory.</p> <p>20 Q What did you find?</p> <p>21 A What we find is a sequence of 45-degree plots,</p> <p>22 so much of those with which I started. Each dot</p> <p>23 represents a precinct. I have put ellipses around</p> <p>24 these dots to indicate sampling variance, because</p> <p>25 Jackson County is relatively small; other counties are</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>318</p> <p>1 not, relatively speaking. You can see, to make this 2 clear, would have 8,000 approximately optical scan 3 ballots, 1500 approximate touch screen ballots. What we can see in the senate race is that these points are clustered around the 45-degree line. Q What that means is that, on election day the 7 undervote rate was approximately the same for touch 8 screen voters and optical scan voters in the U.S. 9 Senate race. 10 So my earlier pictures compared election day 11 and early, when we had this format. Now I'm comparing 12 touch screen election day, optical scan election day. 13 That's what we find in the senate race. 14 In the governor's race, which was the first 15 race on the next page, we see same thing, nothing 16 notable at all. On the third page we see different 17 results. 18 So recall, our ballot format theory would 19 predict that where you would start to see confusion 20 effects would be at the AG and CFO races. That's 21 exactly what we see. 22 Now, you will notice that some of these 23 ellipses are large; again, illustrating the fact that 24 we have smaller precincts. But nonetheless, 25 particularly at the AG race, you can see that most of ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>320</p> <p>1 look at a variety of features of these -- of the 2 precincts. And we find a result that's completely 3 consistent with everything I've showed you here, which 4 is primarily I'm just counting. 5 Q Now, are you done with the screens? 6 A Yes, I am. 7 Q Okay. Would you have a seat? 8 THE WITNESS: Your Honor, may I return? 9 THE COURT: Uh-huh. 10 BY MR. CODY: 11 Q Professor, in light of all the analysis that 12 you've done, have you come to a conclusion, within a 13 reasonable degree of certainty in the social sciences, 14 as to the underlying cause of the -- well, before I 15 get there let me ask you: What was the relative 16 undervote rate in CD 13 in Sarasota County? 17 A I'm -- 18 Q What was the undervote rate in -- 19 A Well it was approximately 14 percent among 20 election day and early voters. 21 Q And what was the undervote rate in the 22 attorney general races in those three counties that 23 you talked about, in Charlotte, in Sumter, and in Lee? 24 A I don't remember the exact numbers off the top 25 of my head. It's approximately between 2 and 5 ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>319</p> <p>1 these ellipses lie completely above this line. 2 What does that mean? That means we see 3 elevated touch screen undervote rates among -- excuse 4 me -- we see elevated undervote rates among touch 5 screen voters only. I should emphasize this is the 6 same county, same set of election administration for 7 all voters, yet we see a confusion effect, what we 8 believe is a confusion effect, in the attorney 9 general's race; we see it for the CFO race. 10 And then when we turn to the agriculture race, 11 which was on the next page, it goes away. 12 Q And so the AG and the CFO race were together 13 on the same page of the iVotronic? 14 A The first page contained U.S. Senate race 15 only. The second page contained governor, attorney 16 general, CFO; third, agriculture. Which means our 17 theory says, if there is confusion, it will be AG and 18 CFO. And that's what we see. 19 Q Okay. Now, did that conclude your examination 20 of the data that you felt necessary in order to come 21 to a conclusion? 22 A Yes. And we have done many other analyses as 23 well. 24 Q Okay. And what were those analyses? 25 A We've conducted many regression analyses that ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>321</p> <p>1 percent, I believe. 2 Q Okay. In what counties did it show -- the 3 attorney general races show very, very high undervote 4 rates? 5 A Only in three counties; Charlotte, Lee and 6 Sumter. 7 Q Okay. And what was the rate in those 8 counties? 9 A Twenty-five percent among election day and 10 early day voters in Charlotte County. Lee was 21 11 percent. Sumter was 24 percent. 12 Q And was that higher than the undervote rate in 13 CD 13 in Sarasota? 14 A Much higher. 15 Q Now, have you -- based upon the analysis that 16 you've done, the data that you looked at, have you 17 come to a conclusion, within a relative degree of 18 certainty acceptable within the social sciences, as to 19 what caused the undervote in CD 13 in Sarasota County? 20 A Yes, I have. 21 Q And tell me what that conclusion is. 22 A In my judgment, all the evidence that we have 23 seen points to ballot formats. And what I mean "all 24 the evidence," what I mean is a combination of 25 precinct level data and ballot level data. County ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: center;">322</p> <p>1 level data is there too, but that's not particularly 2 useful once you have precinct level data. 3 The evidence that I find most compelling at 4 the precinct level and at the ballot explains, in our 5 opinion, in my opinion, the CD 13 undervote rate in 6 Sarasota County, because in fact that rate was 7 isolated, and because we know the ballot format 8 differed for that race only in Sarasota County. 9 When we look at Charlotte, Lee and Sumter 10 counties, we observe very striking undervote rates. 11 We observed very different ballot formats for those 12 particular races. 13 We observed furthermore, we observe in 14 Miami-Dade County a moderating effect of what we think 15 is a ballot format effect. So in particular, we have 16 two types of counties; we have counties that have what 17 appear to be extremely confusing formats, like 18 Sarasota, Lee, and Sumter, and Charlotte. And we have 19 counties that have formats that are -- appear to be 20 moderately confusing. 21 This is a very important point, because if our 22 theory is right, when you have moderately confusing 23 formats, you should see moderated undervote rates. We 24 wouldn't expect to see undervote rates jumping around 25 in Miami-Dade the way we did in Charlotte County. And ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">324</p> <p>1 analysis that would need to be done in order to test a 2 voter confusion theory? 3 A Yes, I did. 4 Q And did you in fact follow that kind of 5 analysis which Dr. Wallach suggested in coming to the 6 conclusion that you just gave us? 7 A I believe that is exactly what we did. 8 Q Okay. And -- 9 MR. CODY: Excuse me. Your Honor, I have 10 nothing further. 11 MR. DeGRANDY: Your Honor, we can make a phone 12 call. I had Professor Lewis, as well as our 13 paralegal, head out as soon as this problem was 14 discovered. I assume they should be back shortly. 15 If you like, we can make a phone call. 16 THE COURT: We're going to break now. I can 17 give you until 3:00 today. That's the best I can 18 do, folks. But we will start back at 1:30. And if 19 we don't get through, then we just have to come 20 back another day. 21 MR. DeGRANDY: Yes, sir. 22 THE COURT: Okay? 23 (Lunch recess). 24 CROSS EXAMINATION 25 BY MR. HIRSCH: ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: center;">323</p> <p>1 we don't. 2 In Miami-Dade, what we have, the presence of a 3 congressional race on the first page affecting the 4 correlation between undervote rates on the second and 5 third page, and the only evidence I have seen to 6 explain this is ballot format effects. 7 Q Okay. Now, one of the things that Professor 8 Wallach talked about when he was on the stand was that 9 there may be an effect, given the number of either 10 candidate names or checkboxes that a voter would be 11 presented with would somehow be tied into the number 12 of undervotes or the amount of undervoting. In the 13 analysis you did, did you see any connection between 14 those two things? 15 A We did not. The most natural place that we 16 thought to look was Nassau County, which, as I 17 mentioned, had something like 20 voters on the first 18 page. And we see no observable effects in Nassau 19 County. 20 Q Now, you were here while Professor Wallach was 21 on the stand; correct? 22 A That is correct. 23 Q And you heard his testimony? 24 A Yes, I did. 25 Q And did you hear him describe the kind of ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">325</p> <p>1 Q Professor Herron, my name is Sam Hirsch. I 2 represent Plaintiff Jennings. Professor, you were 3 retained by counsel for Election Systems & Software on 4 Wednesday, December 6; is that right? 5 A Exact date is specified in my declaration. 6 That sounds right. 7 Q By then you had already put out on the web the 8 initial draft of your paper on the Sarasota undervote? 9 A It's a draft, yes. 10 Q And the date of the initial draft was November 11 23rd, Thanksgiving Day; is that right? 12 A That's correct. 13 Q And then you had a longer, revised version of 14 the paper on Sunday, December 3rd? 15 A That's right. 16 Q And then after that you were retained? 17 A That's correct. 18 Q In both drafts of that paper you stated that 19 the undervote rate in Sarasota County in the 13th 20 congressional district rate was extraordinarily high; 21 correct? 22 A Are you requesting me to quote directly? 23 Q If it is a quote. If you would like, I can 24 refresh your recollection by showing you one. 25 A I would like to make sure we're looking at the ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>326</p> <p>1 same draft of the paper.</p> <p>2 Q Absolutely.</p> <p>3 MR. HIRSCH: May I approach, Your Honor?</p> <p>4 THE COURT: Uh-huh.</p> <p>5 MR. HIRSCH: We don't intend to offer this</p> <p>6 into evidence, but would you like a copy?</p> <p>7 THE COURT: Sure.</p> <p>8 BY MR. HIRSCH:</p> <p>9 Q On page 2, do you say that the rate of</p> <p>10 undervote in Sarasota County in the congressional race</p> <p>11 was extraordinarily high, about halfway down the page?</p> <p>12 A Yes.</p> <p>13 Q Did you estimate that if the voting machines</p> <p>14 in Sarasota County had performed like machines</p> <p>15 elsewhere, that there would have been about 14 to</p> <p>16 15,000 fewer undervotes?</p> <p>17 MR. CODY: Objection, Your Honor. This is</p> <p>18 beyond the scope of -- I beg your pardon.</p> <p>19 THE WITNESS: Could you repeat the question,</p> <p>20 please?</p> <p>21 BY MR. HIRSCH:</p> <p>22 Q Did you estimate that if the voting machines</p> <p>23 in Sarasota County had performed like the machines</p> <p>24 elsewhere, there would have been 14 to 15,000 fewer</p> <p>25 undervotes in the congressional race?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>328</p> <p>1 suppressed votes throughout your paper; correct?</p> <p>2 A Throughout the paper? I'm not sure if that's</p> <p>3 true.</p> <p>4 Q Anywhere in your paper?</p> <p>5 A Yes.</p> <p>6 Q And in your paper you said that if District 13</p> <p>7 election day voters were driven away from</p> <p>8 participating in their congressional race by a blitz</p> <p>9 of last-minute negativity, this should have affected</p> <p>10 all four counties in the District 13 race and not just</p> <p>11 Sarasota; correct?</p> <p>12 A Yes. I believe that to be true.</p> <p>13 Q You say, it's hard to imagine the Sarasota</p> <p>14 result reflects deliberate voter choices; correct?</p> <p>15 A In the sense of deliberate motivated by</p> <p>16 negativity, yes.</p> <p>17 Q If the Sarasota County voters, deliberate</p> <p>18 voter choices, had been accurately reflected in the</p> <p>19 final vote count, would Christine Jennings probably</p> <p>20 have defeated Buchanan?</p> <p>21 MR. BURHANS: Objection, Your Honor.</p> <p>22 MR. CODY: This goes beyond the scope of what</p> <p>23 was discussed on direct. We did not get into</p> <p>24 trying to project who won or did not win the</p> <p>25 election, merely the issue of whether the ballot</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>327</p> <p>1 A What we --</p> <p>2 Q That is a yes or no question, sir.</p> <p>3 A Would you define "elsewhere"?</p> <p>4 Q Did you -- let me turn your attention to page</p> <p>5 46. Do you see the line there saying, "estimated</p> <p>6 pickup"?</p> <p>7 A Yes.</p> <p>8 Q And do you estimate the pickup in terms of</p> <p>9 undervotes to be minus 14,813?</p> <p>10 A If that's the difference between the observed</p> <p>11 and the estimated, that would be correct.</p> <p>12 Q That's the number you wrote there; is it not,</p> <p>13 14,813?</p> <p>14 A Oh, yes. Yes. Correct.</p> <p>15 Q And that means that Jennings and Buchanan</p> <p>16 together would have picked up somewhere between 14 and</p> <p>17 15,000 votes; correct?</p> <p>18 A This table is based on assuming that Sarasota</p> <p>19 voters voted using the layout observed in Charlotte</p> <p>20 County.</p> <p>21 Q And under that assumption there would have</p> <p>22 been 14 to 15,000 more votes for Jennings and Buchanan</p> <p>23 combined; correct?</p> <p>24 A That is our estimate, correct.</p> <p>25 Q You referred to these 14,000-plus votes as</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>329</p> <p>1 format layout led to the undervotes, not what, had</p> <p>2 those undervotes not occurred, what the result of</p> <p>3 the election might have been.</p> <p>4 MR. HIRSCH: Your Honor, he testified on</p> <p>5 direct that he was involved in studying this case</p> <p>6 long before he was retained. He published a paper</p> <p>7 on the Internet about it. And he said it was of</p> <p>8 ongoing academic interest to him and developed all</p> <p>9 sorts of opinions.</p> <p>10 He concluded his direct, the standing part, by</p> <p>11 saying he had done all sorts of other studies. I'm</p> <p>12 asking about some of those other studies which</p> <p>13 showed that he himself believes Jennings would have</p> <p>14 won the race.</p> <p>15 THE COURT: The primary issue I believe in</p> <p>16 this entire case is machine malfunction I've got to</p> <p>17 determine. Now couch it in those terms, I will</p> <p>18 allow it. Otherwise you are beyond the scope of</p> <p>19 direct.</p> <p>20 BY MR. HIRSCH:</p> <p>21 Q If the suppressed vote was due to machine</p> <p>22 malfunction, assume that as your hypothesis, do you</p> <p>23 believe Christine Jennings would have beaten Vern</p> <p>24 Buchanan in this race?</p> <p>25 MR. BURHANS: Objection, Your Honor. This is</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>330</p> <p>1 beyond the scope of direct, and frankly this is not 2 a deposition discovery. If they wanted to get into 3 this, they can do it in the regular course of 4 discovery, not in the hearing where the sole 5 purpose is to determine reasonable necessity. 6 THE COURT: I've already ruled on that. I'm 7 allowing the question. Let's move forward. 8 THE WITNESS: Could you please restate the 9 question? 10 MR. HIRSCH: Could you read the question back 11 to the witness, please. 12 (Pending question read). 13 A So you're asking me to assume something that I 14 don't believe? 15 BY MR. HIRSCH: 16 Q Yes. It's a hypothetical question, the type 17 we ask experts all the time. 18 A So let me make sure I understand this 19 question. If the undervote observed in Sarasota 20 County in the CD 13 race were due to machine 21 malfunction, what would have happened? Is that what 22 you're asking me? 23 Q What would have happened if the machines had 24 not malfunctioned under that assumption? 25 A The only way I can answer that is by saying, ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>332</p> <p>1 MR. HIRSCH: Can we have someone put up the 2 visuals? We will go ahead while it's being set up. 3 Do you have a hard copy? 4 THE WITNESS: I do, sir. 5 MR. HIRSCH: And, Your Honor, do you have your 6 hard copy? 7 THE COURT: Uh-huh. I say I do. I don't know 8 if I do or not. No, I don't. 9 MR. HIRSCH: May I approach? 10 THE COURT: I have what was given to me this 11 morning. 12 MR. HIRSCH: We now have the full copy that 13 has the missing pages. 14 BY MR. HIRSCH: 15 Q Turning to page 6, along the bottom there, the 16 X axis, you have absentee undervote rate; correct? 17 A I want to ensure we're looking at the same 18 page. Is this --? 19 Q My page 6 says, undervoting in CD 13, U.S. 20 Senate race. At the bottom right-hand corner, 6 out 21 of 39. 22 A I'm with you. 23 Q When I give you page numbers, look at the 24 bottom right-hand corner. On the X axis you have 25 absentee undervote rate; correct? ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>331</p> <p>1 if the Sarasota voters had voted using the Charlotte 2 County format, then the estimates are as you 3 described. 4 Q When you say "as you described," you mean 5 what? 6 A The number you read to me was 1 -- excuse me, 7 14,813? 8 Q My question was who would have won. 9 A Who would have won in a legal sense, or who 10 would have won by having more votes? 11 Q The latter. 12 A Our estimates are that, if Sarasota voters had 13 voted using the format used in Charlotte County, that 14 Jennings would have won. 15 Q Turning -- 16 MR. BURHANS: Objection, Your Honor. I would 17 like to move to strike that line of testimony. 18 That was based upon the assumption that they're 19 using a different ballot format. That's not the 20 basis of the plaintiff's machine malfunction 21 theory. This is really getting far beyond -- 22 THE COURT: You don't have a jury to confuse, 23 counsel, just me. Let's move on. Time is running. 24 BY MR. HIRSCH: 25 Q Let's turn to your presentation today. ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>333</p> <p>1 A Correct. 2 Q And on the Y axis, coming up the left side of 3 the page, you have election day undervote rate? 4 A Correct. 5 Q And you did not present the equivalent graphs 6 for the early voting electronic votes; did you? 7 A No, I did not. 8 Q And you do know that the undervote rate in 9 Sarasota County was highest among the early voting 10 electronic ballots, higher than among the election day 11 electronic ballots; don't you? 12 A Yes. 13 Q Let me turn to pages -- page 10, please. Am I 14 correct in understanding that every horizontal line 15 there represents a unique category of voters based on 16 how they voted for each of these offices and ballot 17 measures? 18 A It is what I call the profile. That's my 19 category. 20 Q So each line is distinct and represents a 21 particular combination of votes for various offices 22 and ballot measures; right? 23 A I believe your understanding is correct. 24 Q Can you tell me, what is the difference 25 between the first row and the third row? ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>334</p> <p>1 A Undoubtedly, some very subtle shading or a 2 typo. 3 Q And what is the difference between the fourth row and the fifth row? 4 A I would say the latter, judging by the 5 resolution of this page. 6 Q What do you mean the latter? 7 A What I said before. 8 Q A typo? 9 A Or subtle shading. 10 Q What do you mean by "subtle shading"? They're 11 either blue or red or brown or light brown or green; 12 right? 13 A That is correct. 14 Q What is the difference between the 18th and 15 19th rows? 16 A Just a second (examining document). 17 MR. HIRSCH: Your Honor, this exhibit will be 18 in evidence. There is no difference at all. I 19 don't want to take forever. 20 THE WITNESS: I believe that's correct. 21 THE COURT: I saw that. 22 MR. HIRSCH: May I represent to the court the 23 same thing can be found between the 20th and 21st 24 rows; on the next page, between the second and 25 ACCURATE STENOGRAPH REPORTERS, INC.</p>	<p>336</p> <p>1 Q And that high undervote rate was reportedly 2 iVotronic's system; right? 3 A Yes. 4 Q And you found an elevated undervote rate for 5 the attorney general's race in Lee County; right? 6 A Yes. 7 Q Again, it was displayed on a screen with a 8 seven-candidate race? 9 A Yes. 10 Q And that screen was one of the first three or 11 four that a voter would have seen? 12 A Yes. 13 Q And that high undervote rate was reported on 14 the iVotronics voting system; right? 15 A Yes. 16 Q And you found elevated undervote in the 17 attorney general race for Sumter? 18 A Yes. 19 Q Also on a crowded screen with seven lines for 20 governor and two for attorney general; correct? 21 A Are you asking me to describe it as crowded? 22 Q Withdraw "crowded." Also on a screen with 23 seven lines for governor and two lines for attorney 24 general; right? 25 A There were seven -- yes, yes. ACCURATE STENOGRAPH REPORTERS, INC.</p>
<p>335</p> <p>1 third; on the next page, between the fourth and 2 fifth, 11th and 12th, 18th and 19th, and save the 3 court some trouble and time to have the witness 4 count through these? The exhibits will speak for 5 themselves. 6 THE COURT: Uh-huh. 7 MR. HIRSCH: They purport to represent unique 8 combinations, and they do not. So with your 9 indulgence, I would like to move forward. 10 THE COURT: Okay. 11 BY MR. HIRSCH: 12 Q Professor, you found an elevated undervote 13 rate for one race in Charlotte County; correct? 14 A We looked among top races, and we found an 15 elevated undervote rate in the attorney general race, 16 that's correct. 17 Q That was for an office displayed on a screen 18 that had a seven-candidate gubernatorial field as well 19 as the two-candidate attorney general's field? 20 A Correct. 21 Q And that screen was one of the first three or 22 four screens a voter would have seen; correct? 23 A It's not three or four. It is -- 24 Q One of the first three or four? 25 A That is correct. ACCURATE STENOGRAPH REPORTERS, INC.</p>	<p>337</p> <p>1 Q And that was, again, one of the first three or 2 four that a voter would have seen? 3 A Technically speaking, we don't actually know 4 which direction that voters went. But, yes, I would 5 say that's correct. 6 Q The voter can start at the back end of the 7 ballot on a iVotronics? 8 A A voter can start, go to the back, work toward 9 the front. 10 Q The first thing they would see is the front of 11 page one of the ballot; correct? 12 A Yes. Yes. 13 Q You found an elevated undervote rate for one 14 race in Sarasota County, the congressional race; 15 right? 16 A Again, one of the top races that we looked at. 17 Q And that was for an office displayed on the 18 same screen as the seven-candidate gubernatorial 19 field; right? 20 A It was above the seven-candidate gubernatorial 21 field, unlike the other counties. 22 Q It, again, was one of the first three or four 23 screens that a voter would have seen, barring some 24 bazaar paging from the back and working backwards? 25 A That is correct. ACCURATE STENOGRAPH REPORTERS, INC.</p>

<p>338</p> <p>1 Q And that high undervote rate was also reported</p> <p>2 on the iVotronics system; right?</p> <p>3 A Yes.</p> <p>4 Q You compared undervote rates on iVotronics</p> <p>5 machines using the bit map screen style, which I think</p> <p>6 you also called the pixel style, like Nassau or</p> <p>7 Miami-Dade County's machines, and the iVotronics</p> <p>8 machines using the text-based screen style like</p> <p>9 Sarasota's; correct?</p> <p>10 A I discussed both of them, yes.</p> <p>11 Q Professor, this is a blowup of page 2 of the</p> <p>12 Sarasota County electronic ballot, which is already in</p> <p>13 evidence as Jennings Exhibit 7A. Is that screen what</p> <p>14 we call in a landscape format, meaning that it's wider</p> <p>15 than it is tall, like a normal TV set would be?</p> <p>16 A You're asking me to measure that -- I'm</p> <p>17 confused what you're asking me.</p> <p>18 Q Is that screen wider than it is tall?</p> <p>19 A I would say so.</p> <p>20 Q Can we put up page 22 of your presentation</p> <p>21 from this morning?</p> <p>22 A Again, I'm referring here to the one that says</p> <p>23 22 out of 39 on the bottom right-hand corner.</p> <p>24 Q Is that screen in what we would call a</p> <p>25 portrait format, meaning it's taller than it is wide?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>340</p> <p>1 the bit map screen is not going to be identical to the</p> <p>2 ballot programming in the iVotronics using the</p> <p>3 text-style screen?</p> <p>4 A The ballot programming software? I know</p> <p>5 nothing about the ballot programming software.</p> <p>6 Q If the ballot programming software were</p> <p>7 different in the two machines, you would admit,</p> <p>8 wouldn't you, that it's possible one type of machine</p> <p>9 could have a software bug that the other wouldn't</p> <p>10 have?</p> <p>11 MR. CODY: Again, Your Honor, objection,</p> <p>12 assumes facts not in evidence.</p> <p>13 THE COURT: If he knows, he can answer. If he</p> <p>14 doesn't, say he doesn't know.</p> <p>15 A I know nothing about the ballot programming</p> <p>16 software.</p> <p>17 BY MR. HIRSCH:</p> <p>18 Q You testified that in Duval County, Florida,</p> <p>19 the undervote rates in the 2000 presidential election</p> <p>20 were highest in the precincts that had the largest</p> <p>21 concentrations of African-American voters; right?</p> <p>22 A That's what that plot demonstrated.</p> <p>23 Q And from that you conclude that</p> <p>24 African-Americans are more likely -- were more likely</p> <p>25 to be confused by that ballot; correct?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>339</p> <p>1 A Yes.</p> <p>2 Q To the best of your knowledge, do each of</p> <p>3 these iVotronics screens -- each of these iVotronics</p> <p>4 pages in their respective counties fill the screen on</p> <p>5 the machine?</p> <p>6 A I can't comment on that, no.</p> <p>7 Q I will represent to you that they do. If that</p> <p>8 were the case, it is pretty clear; isn't it, that</p> <p>9 these are being used on different types of iVotronics</p> <p>10 machines; correct?</p> <p>11 MR. CODY: Objection, Your Honor, assumes</p> <p>12 facts not in evidence. He doesn't know --</p> <p>13 THE COURT: If he knows the answer, he can say</p> <p>14 so. If he doesn't, say, I don't know.</p> <p>15 A Different types, meaning what?</p> <p>16 BY MR. HIRSCH:</p> <p>17 Q That they're not reversible, that the machine</p> <p>18 that has the horizontal screen is a different machine</p> <p>19 from the one that has the vertical screen.</p> <p>20 A I really don't know the engineering</p> <p>21 distinctions about how the machine is different. I</p> <p>22 have been told that the firmware is identical across</p> <p>23 all machines.</p> <p>24 Q You acknowledge, though, that the ballot</p> <p>25 programming software for an iVotronics machine using</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>341</p> <p>1 A Incorrect.</p> <p>2 Q You testified that in Sarasota County this</p> <p>3 year the undervote rates were highest in the precincts</p> <p>4 with the largest concentration of people over the age</p> <p>5 of 75; right?</p> <p>6 A Correct.</p> <p>7 Q And you found a similar pattern for Charlotte</p> <p>8 County precincts for attorney general voting; correct?</p> <p>9 A Correct.</p> <p>10 Q But you concede, don't you, that the age</p> <p>11 factor was not statistically significant in your</p> <p>12 Charlotte County analysis; correct?</p> <p>13 A When you say "your Charlotte County analysis,"</p> <p>14 do you refer to the individual by progression here, or</p> <p>15 do you mean something elsewhere?</p> <p>16 Q Just a moment, Your Honor, while I find the</p> <p>17 right page of the exhibit.</p> <p>18 Look at page 26 of your presentation from this</p> <p>19 morning, please. Under the column that says, AG,</p> <p>20 meaning attorney general, is there a number, .16, that</p> <p>21 represents what you call the undervote age slope?</p> <p>22 A Yes.</p> <p>23 Q And is that in gray text?</p> <p>24 A Yes.</p> <p>25 Q And did you testify the numbers in gray text</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>342</p> <p>1 are not statistically significant?</p> <p>2 A Yes.</p> <p>3 Q So is that number statistically significant?</p> <p>4 A No.</p> <p>5 Q When you analyzed the age factor, you said you</p> <p>6 used a voter file from a company called Polimetrix;</p> <p>7 correct?</p> <p>8 A Correct.</p> <p>9 Q Did you exclude from the voter file those</p> <p>10 voters who did not actually turn out and vote in the</p> <p>11 2006 election?</p> <p>12 A No. We excluded those who didn't vote in the</p> <p>13 2004 election, because that was the best information</p> <p>14 we had.</p> <p>15 Q So there is voters in the file that, as you</p> <p>16 used it, who didn't vote in the 2000 election and</p> <p>17 voters who did vote in the 2000 election who weren't</p> <p>18 in the file?</p> <p>19 A I'm sorry, 2000?</p> <p>20 Q Excuse me if I misspoke. Are there voters in</p> <p>21 your file who did not vote in the 2006 election?</p> <p>22 A It's possible.</p> <p>23 Q And are there voters who voted in the 2006</p> <p>24 election who were not in your file?</p> <p>25 A Are there voters who voted in the 2006</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>344</p> <p>1 A No.</p> <p>2 Q I'm sorry?</p> <p>3 A No.</p> <p>4 Q No? The total number of congressional</p> <p>5 undervotes on electronic ballots in Sarasota County</p> <p>6 was about 17,800; correct?</p> <p>7 A And 25.</p> <p>8 Q Thank you. And your best estimate of what you</p> <p>9 call the suppressed vote in Sarasota County is 14,800;</p> <p>10 correct?</p> <p>11 A The December 3rd draft of the paper refers to</p> <p>12 suppressed. That's not language I use today.</p> <p>13 Q The total number of what I would call normal</p> <p>14 undervotes is just the difference, which is about</p> <p>15 3,000 votes; right?</p> <p>16 A Normal?</p> <p>17 Q Let me put it simply. Is 17,800 minus 14,800</p> <p>18 approximately 3,000?</p> <p>19 A Yes.</p> <p>20 Q And 3,000 votes is about 2.5 percent of the</p> <p>21 119,000 and change in terms of numbers of electronic</p> <p>22 ballots cast in Sarasota County this year; correct?</p> <p>23 A You mean is that fraction .05?</p> <p>24 Q That's two and a half percent?</p> <p>25 A Yes.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>343</p> <p>1 election who are not in my file? It is possible.</p> <p>2 Q If someone registered to vote in 2006, would</p> <p>3 they be in a file of 2004 voters?</p> <p>4 A No.</p> <p>5 Q Did you exclude from your voter file those</p> <p>6 voters who voted absentee on paper ballots in 2006?</p> <p>7 A No.</p> <p>8 Q Are aware of the political science literature</p> <p>9 showing that people over the age of 75 are</p> <p>10 particularly likely to vote absentee?</p> <p>11 A I believe that's what the literature thinks.</p> <p>12 Q But there is no way an absentee voter, even if</p> <p>13 they're 100, could be confused by an electronic voting</p> <p>14 machine they're not using; correct?</p> <p>15 A In the technical sense, of course, someone</p> <p>16 couldn't be confused by a machine he didn't use.</p> <p>17 That's why I didn't use it. I think the answer to</p> <p>18 your question is yes.</p> <p>19 Q On pages 6 through 9 of your presentation this</p> <p>20 morning you limited yourself to precincts with more</p> <p>21 than 100 people; correct?</p> <p>22 A That is correct.</p> <p>23 Q On page 16, when you analyzed age, did you</p> <p>24 also exclude small precincts and limit yourself to</p> <p>25 precincts with more than 100 people?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>345</p> <p>1 Q So if there had been no suppressed votes, as</p> <p>2 you used that term previously, the undervote rate in</p> <p>3 Sarasota County's congressional race would have been</p> <p>4 very roughly in the ballpark of 2.5 percent?</p> <p>5 A What I have said is, if the Sarasota voters</p> <p>6 had used the Charlotte machines and the format, then</p> <p>7 we would have expected to see an undervote rate of</p> <p>8 approximately 2.5 percent.</p> <p>9 Q And you've testified about the high undervote</p> <p>10 rates in the Sarasota County precincts that contained</p> <p>11 the largest numbers of voters over 75; correct?</p> <p>12 A Would you restate that, please?</p> <p>13 Q You've testified about the high undervote</p> <p>14 rates in the Sarasota County precincts that contain</p> <p>15 the largest number of voters over the age of 75</p> <p>16 according to your voter file; right?</p> <p>17 A That's correct.</p> <p>18 Q And those precincts with lots of folks above</p> <p>19 the age of 75 have undervote rates far in excess of</p> <p>20 2.5 percent; don't they?</p> <p>21 A Those -- those precincts with large numbers of</p> <p>22 voters over 75 had higher -- yes, that's correct.</p> <p>23 Q But you admit; don't you, if you look at the</p> <p>24 youngest precincts in the entire county, they also</p> <p>25 have undervote rates far in excess of 2.5 percent;</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>1 don't they?</p> <p>2 A Yes. That follows from page 16.</p> <p>3 Q And isn't it true that every precinct in Sarasota County had an undervote rate above 2.5 percent on election day?</p> <p>6 A Literally everyone? I believe that is correct, but I cannot say for certainty.</p> <p>8 Q Are you looking at the right-hand graph on page 16 of your presentation from this morning?</p> <p>10 A Yes, I am.</p> <p>11 Q Along the X axis at the bottom, am I correct that you've shown the fraction of voters who are at least 76 years old?</p> <p>14 A Yes.</p> <p>15 Q Can we put that up on the screen, please?</p> <p>16 (Discussion off the record).</p> <p>17 BY MR. HIRSCH:</p> <p>18 Q Let me ask you about this dot here. I'm pointing to the far right-hand dot on page 16 in the right-hand graph. That represents one precinct in Sarasota County?</p> <p>22 A Correct.</p> <p>23 Q And am I reading it correct -- correctly that if you go down here, you're telling us that that precinct has well in excess of 90 percent of its</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>348</p> <p>1 A Will you extrapolate from the production line all the way to the left?</p> <p>3 Q Uh-huh, yes.</p> <p>4 A I would say that's correct.</p> <p>5 Q And is it correct, therefore, that you estimate the undervote rate in a precinct with no voters over the age of 75 as being just a tad under 10 percent?</p> <p>9 A Are you asking me to measure on the page?</p> <p>10 Q Sure.</p> <p>11 A I would say that looks reasonably plausible.</p> <p>12 Q And is 10 percent about four times a 2.5 undervote rate?</p> <p>14 A Well, technically speaking, it's exactly.</p> <p>15 Q Just to be clear, we're speaking there of a precinct with no voters, according to your voter file, over the age of 75; correct?</p> <p>18 A Correct.</p> <p>19 Q Let's talk about your theory of voter confusion. If I understand your theory, it's that voters who are not primed to look for more than one ballot on a particular page would vote a ballot on the first page, but then when they hit -- and maybe on the second page, if there is only one contest there. But whenever they first hit a page that has more than one</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>347</p> <p>1 voters above the age of 75?</p> <p>2 A According to our voter file, given the conditions I gave you before.</p> <p>4 Q The voter file that didn't have the 2006 voters in it and had non-2006 voters in it?</p> <p>6 A The voter files that -- we looked at 2004 voters, correct.</p> <p>8 Q Did you personally look at this voter file and verify that it looked sensible, or did you entrust that to your graduate students or colleagues?</p> <p>11 A Could you repeat that question, please?</p> <p>12 MR. HIRSCH: Could you read back the question?</p> <p>13 (Question read).</p> <p>14 A I've looked at that voter file.</p> <p>15 BY MR. HIRSCH:</p> <p>16 Q Can you please tell us where this curious precinct with 90-plus percent of the voters over the age of 65 is in Sarasota County?</p> <p>19 A No.</p> <p>20 Q Let's turn to the left side of the graph along here. Am I correct that if you start here at zero, for fraction of voters at least 76 years, and go up to your line, that would reflect the likely undervote in a hypothetical precinct where nobody was over the age of 75?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>349</p> <p>1 contest, they would vote for one and miss what follows; is that correct?</p> <p>3 A No.</p> <p>4 Q Please explain to me why it's not.</p> <p>5 A Because we don't suggest this would happen to all voters.</p> <p>7 Q Did you suggest that what I've described is what happens to some voters and therefore might elevate the undervote rate?</p> <p>10 A You described there the alleged confused voters' behaviors on multiple races when they reached a confusing point. I don't -- I'm not sure that your characterization of how they would vote in all those other races is accurate.</p> <p>15 What we've said in the theory was that the first time a voter reaches an inconsistent ballot page, given what he or she had seen to start, we expect that's where confusion, if it ever occurs, might begin.</p> <p>20 Q Can we turn to page 27 of this morning's presentation, please. This is the one that says across the top, Collier County, top ballot races. Do you remember testifying about this screen this morning?</p> <p>25 A Yes.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>350</p> <p>1 Q Did you testify that the senate race was on 2 its own screen and had a relatively low undervote 3 rate?</p> <p>4 A The senate screen is on its own race, that's 5 correct.</p> <p>6 Q And the governor's race is on its own screen, 7 also a low undervote rate?</p> <p>8 A That is correct.</p> <p>9 Q I think you also said that in between there 10 might be a congressional race on its own page as 11 well --</p> <p>12 A That's correct.</p> <p>13 Q -- you don't have it on this table? Then when 14 they get to what is probably actually the fourth 15 screen, the first thing the voter would see is the 16 attorney general's race, followed by the CFO and 17 agriculture commissioner's race; correct?</p> <p>18 A That is correct.</p> <p>19 Q And you testified that the undervote rates 20 were much lower for the attorney general than for the 21 CFO and ag commissioner; correct?</p> <p>22 A Yes.</p> <p>23 Q And that was consistent with your theory that 24 if they had seen one one test on each of the first 25 three pages; they got to this fourth page; voted for</p> <p>ACCURATE STENO TYPE REPORTERS, INC.</p>	<p>352</p> <p>1 after the PEB is put in, will display page one first, 2 that's why they call it page 1?</p> <p>3 A That's my understanding.</p> <p>4 Q This is page 2. We agree that there is only 5 one contest on the first page of the Sarasota County 6 ballot, and that's the U.S. Senate race?</p> <p>7 A I agree.</p> <p>8 Q Do we agree that the first contest on page 2 9 is not the governor's race; it is the congressional 10 race at issue in this case here?</p> <p>11 A You mean first in a physical sense or first in 12 the sense in which voters actually see it?</p> <p>13 Q First in the physical sense.</p> <p>14 A I would say, given it is literally on top, if 15 that's your definition of first, it's the first.</p> <p>16 Q And your understanding is there was a high 17 undervote rate in the first race, as we just defined 18 it, and a low undervote rate in the second race, as we 19 just defined those terms?</p> <p>20 A It is in fact a point of fact that there is a 21 high undervote rate in the CD 13 race and a low 22 undervote rate in the governor's race.</p> <p>23 Q Is it your theory that -- can we pull up on 24 the screen over there the Charlotte County ballot, 25 please. It's page 20. It's the third subpage for</p> <p>ACCURATE STENO TYPE REPORTERS, INC.</p>
<p>351</p> <p>1 AG if they were interested, but skipped what was below 2 it because it was the first time they were seeing or 3 not seeing the races below it on the same screen; 4 correct?</p> <p>5 A I don't know whether their interest has 6 anything to do with this.</p> <p>7 Q But your theory is the fact that it came below 8 the first race and was the first screen with multiple 9 races in importance; correct?</p> <p>10 A Below? I'm not willing to say below is the 11 key issue here.</p> <p>12 Q Well maybe we can probe that and see why 13 you're not so willing to say it. This is page 2 -- 1 14 just put back up Exhibit 7A for the record. This is 15 page 2 of the Sarasota County ballot. And here a 16 voter working from the top down on page 1 would have 17 voted for U.S. Senate; correct?</p> <p>18 A I don't know if voters always work from top 19 down.</p> <p>20 Q You have this theory that voters, although the 21 electronic machines show them page one, march to the 22 end of the ballot and start working their way 23 backwards; is that what I understand you to be saying?</p> <p>24 A No.</p> <p>25 Q Is it your understanding that iVotronics,</p> <p>ACCURATE STENO TYPE REPORTERS, INC.</p>	<p>353</p> <p>1 page 20. So these are the two screens we've been 2 discussing, Sarasota here on the left, on the blowup 3 here -- excuse me, on the screen here we have 4 Charlotte County; correct?</p> <p>5 A That's the Charlotte County ballot, correct.</p> <p>6 Q These are both the screens where there is a 7 gubernatorial race, seven candidates on this screen; 8 correct?</p> <p>9 A Yes.</p> <p>10 Q And they share the screen with a two-candidate 11 race in Sarasota County; that is a congressional race; 12 correct?</p> <p>13 A That's correct.</p> <p>14 Q And in Charlotte it is an attorney general's 15 race; correct?</p> <p>16 A Correct.</p> <p>17 Q And the high undervote rate is the 18 top-of-the-screen race in Sarasota County and the 19 bottom-of-the-screen race in Charlotte County; 20 correct?</p> <p>21 A Correct.</p> <p>22 Q Is it your theory that people in Sarasota 23 County read the ballot from bottom to top, and people 24 in Charlotte County read it from top to bottom?</p> <p>25 A Are you asking me to comment on what draws</p> <p>ACCURATE STENO TYPE REPORTERS, INC.</p>

<p>354</p> <p>1 people's attention first?</p> <p>2 Q No. I'm asking if it's your theory that we</p> <p>3 see low undervote in the bottom and high in the top in</p> <p>4 Sarasota County, and the opposite in Charlotte County</p> <p>5 is attributable to your belief that people read in the</p> <p>6 opposite direction in these two counties?</p> <p>7 A I don't have any beliefs of the direction that</p> <p>8 any individual will read.</p> <p>9 Q Professor, you said that you got the ballot</p> <p>10 image files for about a dozen, roughly, Florida</p> <p>11 counties that use ES&S's iVotronics system; right?</p> <p>12 A I could count the exact number, but a dozen is</p> <p>13 close.</p> <p>14 Q You said you requested ballot image logs also</p> <p>15 from the Florida counties that used other</p> <p>16 manufacturers' electronic voting machines; right?</p> <p>17 A I testified to that, yes.</p> <p>18 Q Approximately when did you request the ballot</p> <p>19 image logs from the iVotronics counties?</p> <p>20 A I don't know. Give you the exact date?</p> <p>21 Q Not the exact date. Approximately.</p> <p>22 A That process has been ongoing for several</p> <p>23 weeks. I imagine that probably the very first time I</p> <p>24 spoke with them I asked. I can't be -- I can't be</p> <p>25 certain. But I'm in the habit of whenever I speak</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>355</p> <p>1 iVotronic counties?</p> <p>2 A You're asking me to recall phone conversations</p> <p>3 from a month ago. But I would imagine -- I mean you</p> <p>4 want me to speculate?</p> <p>5 Q No. I want you to give your best</p> <p>6 recollection.</p> <p>7 A My recollection is I've made enormous numbers</p> <p>8 of phone calls about logs.</p> <p>9 Q And you've managed to get them for all these</p> <p>10 counties that use iVotronics and none of the counties</p> <p>11 that use other machines?</p> <p>12 A That is correct.</p> <p>13 Q You testified that the ballot format allegedly</p> <p>14 responsible for the U.S. representative race</p> <p>15 undervotes in Sarasota County is most closely</p> <p>16 approximated by the ballot format allegedly</p> <p>17 responsible for the attorney's -- excuse me --</p> <p>18 attorney general's race undervote in Charlotte, Lee,</p> <p>19 and Sumter counties; right?</p> <p>20 A That was in my second declaration, correct.</p> <p>21 Q And is it correct that one common feature</p> <p>22 among those four races; U.S. representative in</p> <p>23 Sarasota, attorney general in Charlotte, Lee, and</p> <p>24 Sumter, is the sharing of the screen between a</p> <p>25 two-candidate field and seven-candidate field for</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>355</p> <p>1 with supervisor of elections officials, I always ask</p> <p>2 for that sort of data.</p> <p>3 Q Would that have been the week of the election</p> <p>4 or the week after the election?</p> <p>5 A The election was on a Tuesday. I -- my guess</p> <p>6 is, the earliest conversation was the next Monday, but</p> <p>7 I really don't know for sure.</p> <p>8 Q I'm not holding you to the date. But for the</p> <p>9 record I want to say to you that is November 13th,</p> <p>10 then, six days after the November 7th election day?</p> <p>11 A That would be correct.</p> <p>12 Q And roughly how long did it take to actually</p> <p>13 get the ballot image logs?</p> <p>14 A It varies by county.</p> <p>15 Q What's the range?</p> <p>16 A Well, some we haven't received.</p> <p>17 Q When did you request the ballot image logs</p> <p>18 from the non-iVotronics counties?</p> <p>19 A My recollection is, we probably did it very</p> <p>20 quickly, because originally we were interested in</p> <p>21 Hillsborough County. Hillsborough County is one place</p> <p>22 I would like the ballot image logs.</p> <p>23 Q Are you saying that you requested the ballot</p> <p>24 image logs from the non-iVotronic counties at the same</p> <p>25 time, approximately, that you requested them from the</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>357</p> <p>1 governor?</p> <p>2 A I testified that the common feature is that</p> <p>3 you have two races on a page, followed by pages that</p> <p>4 had one race on a page.</p> <p>5 Q That's not what I asked you. I asked you if a</p> <p>6 common feature was that they shared a two-candidate</p> <p>7 field for Congress in Sarasota or attorney general in</p> <p>8 the other counties you just named and a</p> <p>9 seven-candidate gubernatorial field; yes or no?</p> <p>10 A I want to understand. I'm looking at this</p> <p>11 page to your left on the board. You're asking me if</p> <p>12 the CD 13 race shares a page with the governor's race?</p> <p>13 Q Yes.</p> <p>14 A Yes, it does.</p> <p>15 Q And in Charlotte County displayed here, the</p> <p>16 same is true?</p> <p>17 A No. The attorney general's race shares a page</p> <p>18 with the governor's race.</p> <p>19 Q Thank you. Correct. And the same that's true</p> <p>20 for Charlotte would be true for Lee and Sumter?</p> <p>21 A That is correct.</p> <p>22 Q And another common feature among all four of</p> <p>23 these races is that they were conducted on iVotronics</p> <p>24 machines; correct?</p> <p>25 A That is correct.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>358</p> <p>1 Q And did you know that other counties in 2 Florida use different brands of electronic voting 3 machines, specifically the Diebold AccuVote TXS or the 4 Sequoia AVC Edge 1?</p> <p>5 A Yes.</p> <p>6 Q Did you bother to look at the ballot screens 7 in those counties to see if they, too, paired the 8 seven-candidate gubernatorial race with a 9 two-candidate congressional or attorney general race?</p> <p>10 A I've spent an enormous amount of time 11 attempting to get screen shots from all counties that 12 do that.</p> <p>13 Q Did you get those screen shots and examine 14 them?</p> <p>15 A We have verbal descriptions of the screen 16 shots. That's all I've been able to get.</p> <p>17 Q So you've been able to get screen shots of all 18 these iVotronic counties, but you can't come in here 19 with any screen shots of the non-iVotronics screens in 20 these other counties?</p> <p>21 A I believe in my records I have pictures that 22 an election official took with a digital camera of, I 23 believe, Pinellas County, but I could be mistaken.</p> <p>24 Q Does it share the feature we just described, 25 having the seven-candidate gubernatorial on the same</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>360</p> <p>1 from Dr. Wallach.</p> <p>2 BY MR. HIRSCH:</p> <p>3 Q Did you receive a message from Dr. Wallach?</p> <p>4 A Yes.</p> <p>5 Q Do you recall what it said?</p> <p>6 A No. But I will -- no. I mean I receive many 7 e-mails, you know.</p> <p>8 Q Do you still have your paper in front of you?</p> <p>9 A Are you referring to the December 3rd draft?</p> <p>10 Q Yes.</p> <p>11 A Yes, I do.</p> <p>12 Q Turn to page 11, please. Did you say then, 13 this paper is purely a statistical exercise, and as 14 such cannot directly address the possibility that 15 engineering lies underneath the undervote rates we 16 studied?</p> <p>17 A I'm looking for that quote.</p> <p>18 Q The last paragraph.</p> <p>19 A Yes, I see the sentence.</p> <p>20 Q And you admit; don't you, that engineering 21 flaws or software bugs could mimic the ballot format 22 effects; don't you?</p> <p>23 A You mean the ballot format effect in Sarasota, 24 Lee, and Charlotte counties, including Miami-Dade?</p> <p>25 Q I mean the ballot format effects that you're</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>359</p> <p>1 screen as a two-candidate congressional or attorney 2 general's race?</p> <p>3 A To the best of my recollection, no.</p> <p>4 Q Do you recall on Sunday, November 26th, that 5 you sent the November 23rd draft of your paper to 6 Professor Dan Wallach, the computer scientist who 7 testified here today?</p> <p>8 A I sent it to many people. I believe I sent it 9 to Professor Wallach.</p> <p>10 Q Do you recall that he wrote you back and said 11 that, your conclusion that voter confusion rather than 12 machine malfunction triggered the high undervote rate 13 would never be convincing unless you found a suitable 14 control using non-iVotronic equipment, by digging up 15 an election on a Diebold system or whatever else had a 16 comparable ballot layout to Sarasota County 17 Congressional District 13?</p> <p>18 MR. CODY: I object in terms of him testifying 19 as to what is in the contents of the hearsay 20 document.</p> <p>21 MR. HIRSCH: The question is the effect it had 22 on him. I'm not asking for the truth of the 23 statement. I'm asking him if he recalls receiving 24 such a message.</p> <p>25 THE COURT: Ask him if he received a message</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>361</p> <p>1 testifying to in Sarasota County.</p> <p>2 A Well, the ballot format effects are general.</p> <p>3 When you say "Sarasota County," should I take that to 4 mean every single ballot format effect we've observed?</p> <p>5 Q Let me repeat. Do you admit that engineering 6 flaws or software bugs could mimic ballot format 7 effects?</p> <p>8 A And I'm sorry. I need you to clarify. Do you 9 mean ballot format effects, everything that I've 10 testified to?</p> <p>11 Q Let's turn to page 12 of your report. Did 12 your paper say, ultimately no statistical analysis of 13 observed voting data can distinguish between ballot 14 format effects and engineering flaws that mimic ballot 15 format effects; right?</p> <p>16 A I said that.</p> <p>17 MR. HIRSCH: No further questions, Your Honor.</p> <p>18 THE COURT: Mr. Finley?</p> <p>19 CROSS EXAMINATION</p> <p>20 BY MR. FINLEY:</p> <p>21 Q Good afternoon, Professor. I'm Lowell Finley, 22 and I represent the 11 voter plaintiffs in the case 23 that's been consolidated with Christine Jennings's 24 case. I just have a couple of questions for you.</p> <p>25 You testified in your direct examination that,</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>362</p> <p>1 as far as you could tell from your study, there was no 2 magic bullet in patterns of how voters cast their 3 votes on the five -- on the statewide races and a vote being turned into an undervote or a result being an undervote; is that correct?</p> <p>4 A That's what the data suggests, yes.</p> <p>5 Q Did you analyze the ballot images in the order 6 in which they were actually cast by the voters? 7 A I'm not sure I understand the question.</p> <p>8 Q When you looked at ballot images to collect 9 your data, did you do any analysis of those ballot 10 images in terms of any effect that might come from the 11 order in which one ballot was cast following another? 12 A Well they're scrambled, so I don't think it 13 would mean anything.</p> <p>14 Q So, in other words, the iVotronics is designed 15 so that, when it records a ballot image, it 16 automatically randomizes them? 17 A I don't know the design features. My 18 understanding is that by the time we get the images, 19 the order has been scrambled.</p> <p>20 Q So given that that's the form you received 21 them in, is it accurate to say that you have no way of 22 studying whether there could be some sort of magic 23 bullet that's tied to the sequence in which voters who 24 25 ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>364</p> <p>1 engineering expert. 2 THE COURT: I'm aware of that. If he knows 3 the answer, he can answer. If he doesn't, he 4 can't.</p> <p>5 A The question is whether there is no way?</p> <p>6 BY MR. HIRSCH: 7 Q No. Is there any way, with the data in the 8 form you have it, that you could test for that? 9 A Any way. Would you like me to speculate?</p> <p>10 Q No. I'm asking you if there is a way that you 11 know of. 12 A I mean, I'm not an expert in deterministic or 13 non-deterministic software bugs. So everything has to 14 be taken with that in mind.</p> <p>15 Q And, again, with in mind the fact that these 16 ballot images came to you in randomized order. 17 A If the alleged software malfunction caused 18 everyone to undervote in every single race after that, 19 it might be noticeable. Of course, we wouldn't have 20 patterns, and I think the data would look pretty 21 strange. So I'm hesitant to say there is no way.</p> <p>22 Q And if an indeterminant software bug didn't 23 cause this effect for every valid -- every voter that 24 followed, let's say, for example, just for the next 25 voter who followed, would you have any way of being ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>363</p> <p>1 voted in patterns cast their ballots?</p> <p>2 A I don't understand.</p> <p>3 Q You heard Professor Wallach's testimony, I 4 believe? 5 A Yes, I did.</p> <p>6 Q And did you hear him testify as to a 7 phenomenon he described as indeterminant software 8 bugs? 9 A Yes.</p> <p>10 Q And I believe he described that as a bug that 11 may manifest itself in a malfunction under certain 12 circumstances, but not under other circumstances; do 13 you recall that? 14 A I recall him testifying to that, yes.</p> <p>15 Q So if, hypothetically, there were a bug that 16 were -- that was triggered initially by a ballot being 17 cast with a certain form -- pattern of a vote entry by 18 voter A, and then voter B followed, and the software 19 bug, the indeterminant software bug, had its impact on 20 the accuracy with which voter B's entries were made, 21 you would have no way, based on your own analysis, to 22 determine whether there was a correlation there; is 23 that correct? 24 MR. CODY: Objection, Your Honor. This 25 witness has not been tendered as a computer ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>365</p> <p>1 able to detect that?</p> <p>2 A Using the ballot image data, do we have any 3 way to associate what one voter does from what the 4 next voter did. No.</p> <p>5 Q Did ES&S ask you at any point to do any 6 polling of voters in Florida? 7 A No.</p> <p>8 Q Did ES&S ask you to do any surveys? 9 A No.</p> <p>10 Q Did ES&S ask you to do any test voting, using 11 ordinary citizens? 12 A Test voting, meaning --</p> <p>13 Q Having ordinary Florida citizens cast ballots 14 in one voting exercise? 15 A No.</p> <p>16 Q And did you look at any such -- the results of 17 any such inquiries? 18 A Yesterday I read the report that the state 19 produced.</p> <p>20 Q And I believe on cross-examination by 21 Mr. Hirsch you said that you know nothing about 22 software programming; is that correct? 23 A Excuse me?</p> <p>24 Q You said that you know nothing about software 25 programming. ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>1 A What I said is, I know nothing about 2 iVotronics software programming. 3 Q Okay. Do you consider yourself professionally qualified to -- to give an opinion as to the testimony given by Professor Wallach with respect to source 6 code? 7 A He gave a lot of testimony. Can you be 8 specific? 9 Q Sure. With the ways in which a source code can -- can malfunction because of coding errors or 11 malicious code. 12 MR. CODY: Objection, Your Honor, beyond the 13 scope of this witness's expertise. 14 MR. FINLEY: I'm just asking whether he has -- 15 he feels that he is qualified or not. 16 THE COURT: I think that your question begs 17 the answer, because he's already answered he's not 18 an expert in the field of those machines. 19 MR. FINLEY: I will move on, Your Honor. 20 THE COURT: It's your time you're using up. 21 BY MR. FINLEY: 22 Q Did ES&S ask you, as part of your analysis, to 23 study whether there had been undervote patterns, 24 similar to those you were investigating here, in any 25 past elections prior to November 2006 involving its ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>1 law? 2 A No. 3 Q Are you aware of any instance where ES&S has 4 communicated with Sarasota County concerning ballot 5 format issues? 6 A No. 7 Q But your testimony is that the -- that a 8 number of other counties, along with Sarasota County, 9 had higher undervotes based upon what you view as 10 their ballot format? 11 A Yes. 12 Q So it's not only Sarasota County that 13 demonstrates your hypothesis? 14 A That is correct. 15 Q The turnout was approximately what in this 16 race; do you know, in Sarasota County? 17 A The election day turnout was approximately 18 120,000. I believe you have those figures up now. 19 Q Yes, sir. 20 A Yes. 21 Q Do you know what percentage turnout that was 22 of the total voter population? 23 A Not exactly, no. 24 Q Not exactly, or you don't have any idea? 25 A Well it's not that I don't have any idea, but ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>1 iVotronics machines? 2 A Did they explicitly ask that? Not to my 3 recollection. 4 MR. FINLEY: Thank you. I have no other 5 questions. 6 MR. LABASKY: It says good morning in my 7 notes -- but actually it's good afternoon -- 8 Professor. 9 CROSS EXAMINATION 10 BY MR. LABASKY: 11 Q In initiating your study, did you review any 12 of the state statutes or the rules of the State of 13 Florida, Department of State concerning ballot format 14 and the process that's undertaken in setting up a 15 screen? 16 A Did I review the formal document? No, I did 17 not. 18 Q Are you familiar with the directions in state 19 law, in state statutes, or the department's rules 20 concerning ballot format? 21 A I couldn't speak with any authority to the 22 official Florida rules. 23 Q So you have no position with respect to 24 whether this ballot format or any of the other ballot 25 formats that you spoke of today complies with state ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>1 I don't know the exact number. 2 Q Do you know how many registered Democratic 3 voters there are in Sarasota County? 4 A As of this moment, I do not know. 5 Q As of any moment? 6 A I mean, it's on our files; I don't have the 7 number memorized, if that's what you meant. 8 Q Just for the sake of my question, if you were 9 to assume that there were 77,872 registered Democrats, 10 as a political scientist who studies these type of 11 things, would you find it surprising that the 12 Democratic candidate, Jennings, would have 65,487 13 votes? 14 A Would I find it surprising? 15 Q Yes, sir. 16 A I want to make sure I understand your premise. 17 There are -- let's call it 78,000 registered 18 Democrats? 19 Q Yes, sir. Yes, sir. 20 A And Jennings receives 65,000 votes? Nothing 21 strikes me as particularly surprising about that. 22 Q Now if I asked -- if I told you that the 23 turnout in this race throughout the county was 50 24 percent of the registered voters, and that there were 25 117,539 -- round off to 118,000 -- Republicans, would ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>370</p> <p>1 you find that, as a political scientist, with a</p> <p>2 50-percent turnout, that Christine Jennings would</p> <p>3 receive 65,000 votes with there only being 77,000</p> <p>registered Democrats?</p> <p>4 A If you're asking me if people always vote</p> <p>5 their party, the answer is no.</p> <p>6 Q Now, in this race, how many votes were</p> <p>7 actually cast?</p> <p>8 A Which race?</p> <p>9 Q In this congressional race that we've been</p> <p>10 discussing all day.</p> <p>11 A It looks like your -- in Sarasota County?</p> <p>12 Q Yes, sir.</p> <p>13 A It looks like your figure says there were</p> <p>14 118,940 for Jennings and 119,309 for Buchanan.</p> <p>15 Q I'm sorry, those -- these numbers are through</p> <p>16 the entire district. The bottom number is the number</p> <p>17 in Sarasota. So there is 58,632 and -- for Buchanan</p> <p>18 and 65,487 for Jennings; correct?</p> <p>19 A That's what your figure says, yes.</p> <p>20 Q And then there were 18,412 undervotes?</p> <p>21 A 18,412. That number sounds correct.</p> <p>22 Q Approximately 124,000 people had no problem,</p> <p>23 apparently, voting in this race; is that accurate?</p> <p>24 A I think your figure, by the way, is 118,725.</p> <p>25 ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>372</p> <p>1 absentee voters actually were on election day?</p> <p>2 Q I'm not asking you where they are; I'm asking</p> <p>3 you if typically absentee voters are individuals not</p> <p>4 in the county where they reside and where the vote was</p> <p>5 placed on election day?</p> <p>6 A That sounds intuitive, but I don't know if</p> <p>7 it's correct.</p> <p>8 Q Would you say that absentee voters, to a</p> <p>9 certain extent, may not be exposed to all of the</p> <p>10 political dynamics going on in a race, because they're</p> <p>11 not in that county or within that media area, as has</p> <p>12 been discussed?</p> <p>13 A You're asking me to speculate on the physical</p> <p>14 locations, and I don't have information about that.</p> <p>15 MR. LABASKY: Nothing further, Your Honor.</p> <p>16 CROSS EXAMINATION</p> <p>17 BY MR. BURHANS:</p> <p>18 Q Good afternoon, Professor. I'm Glenn Burhans.</p> <p>19 I represent Vern Buchanan. I would like to turn our</p> <p>20 attention back, if you will for just a moment, to the</p> <p>21 discussion of the top ballot race analysis that was</p> <p>22 conducted by you. And specifically I want to refer to</p> <p>23 slides 25, 26 and 29 of your presentation.</p> <p>24 Now those slides relate to Sarasota,</p> <p>25 Charlotte, and Lee counties; correct?</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>371</p> <p>1 But approximately the sum of those numbers, are you</p> <p>2 asking me if those people had difficulty voting?</p> <p>3 Q Uh-huh.</p> <p>4 A Well obviously I wasn't there with them, but</p> <p>5 judging by the fact they cast valid votes; that would</p> <p>6 be yes.</p> <p>7 Q Now part of the discussion of this issue is</p> <p>8 partially predicated -- and correct me if I'm wrong --</p> <p>9 on the very low number of undervotes in the absentee</p> <p>10 voters in Sarasota County. Is that part of what sets</p> <p>11 the predicate for this discussion and your hypothesis?</p> <p>12 A Yes.</p> <p>13 Q Where are the absentee voters? Who are they?</p> <p>14 A You mean literally who are they?</p> <p>15 Q Literally.</p> <p>16 A I don't know.</p> <p>17 Q What do you have to do to be an absentee</p> <p>18 voter?</p> <p>19 A According to Florida law?</p> <p>20 Q Yes, sir.</p> <p>21 A I don't know.</p> <p>22 Q Aren't typically absentee voters people who</p> <p>23 are not in the county and therefore don't vote on</p> <p>24 election day?</p> <p>25 A Are you asking me to speculate about where the</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>373</p> <p>1 A Sarasota is page 25. I'm sorry. The other</p> <p>2 page was page 26?</p> <p>3 Q Twenty-six.</p> <p>4 A That was Charlotte County. And what was the</p> <p>5 other page?</p> <p>6 Q Page 29.</p> <p>7 A Lee.</p> <p>8 Q Yes. Now, one thing that those three counties</p> <p>9 have in common is that they were all non-bit map</p> <p>10 formats; correct?</p> <p>11 A Sarasota, Charlotte, and Lee were text based,</p> <p>12 that is correct.</p> <p>13 Q Thank you. And another similarity is that on</p> <p>14 those ballot formats, there was a pairing with the</p> <p>15 governor's race and some other race; correct?</p> <p>16 A In Sarasota and -- yes, that is correct.</p> <p>17 Q But, for example, Sarasota was congressional</p> <p>18 district race 13 and the governor's race; correct?</p> <p>19 A That's correct.</p> <p>20 Q And in Charlotte we had the governor's race</p> <p>21 and the attorney general's race; correct?</p> <p>22 A That is correct.</p> <p>23 Q And the same thing with Lee County, we had the</p> <p>24 governor's race and the attorney general's race?</p> <p>25 A That is correct.</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>374</p> <p>1 Q In each of those pairings we saw what you 2 testified to be a statistically high undervote rate 3 with the race that was paired with the governor's 4 race; correct?</p> <p>5 A I'm not drawing attention to the governor's 6 race. It happened to be that those three races were 7 on the same page as the governor's race.</p> <p>8 Q But it is correct that each of those races 9 that experienced a higher rate of undervote, under 10 your hypothesis, was paired with the governor's race?</p> <p>11 A Not under my hypothesis; that's literally 12 true.</p> <p>13 Q Okay. Thank you for that. Now, isn't it 14 reasonable to conclude that the interest in the 15 governor's race could have overshadowed interest in 16 the other races?</p> <p>17 A Would that be consistent with the voter 18 confusion? Is that what you're asking?</p> <p>19 Q Is it one reasonable conclusion to draw from 20 your analysis that the -- that voter interest in the 21 governor's race overshadowed voter interest in the 22 other races?</p> <p>23 A I don't think that's consistent with what we 24 observed in Miami-Dade, if that's what you mean.</p> <p>25 Q Miami-Dade was not a text-based format; ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>376</p> <p>1 format of these ballot styles, you cannot rule out the 2 possibility that the high undervote rate attributable 3 to races paired with the governor's race is somehow 4 not connected to voter interest in the governor's race 5 overshadowing voter interest in the other races?</p> <p>6 MR. HIRSCH: Objection, Your Honor, asked and 7 answered. I think we're seeing an exercise in 8 taffy-pulling here. We have a three o'clock 9 deadline.</p> <p>10 THE COURT: That's the fourth time you've 11 asked the question.</p> <p>12 MR. BURHANS: I don't think the witness and I 13 are on the same page as to -- I kept saying 14 text-based; he went back to bit map --</p> <p>15 THE COURT: You're asking him to answer a 16 question in a vacuum. If you can answer it, answer 17 it. If you can't --</p> <p>18 A I think it's inconsistent with the evidence 19 we've shown.</p> <p>20 BY MR. BURHANS:</p> <p>21 Q Doctor, in all of your years of experience as 22 a -- an expert in undervote analysis, have you ever 23 come across any situation where engineering flaws 24 mimicked ballot format effects?</p> <p>25 A None that I know of. ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>375</p> <p>1 correct?</p> <p>2 A That is correct, it was pixel based.</p> <p>3 Q Let's talk about the counties I asked you to 4 look at; Lee, Charlotte, and Sarasota County; correct?</p> <p>5 A Correct.</p> <p>6 Q Let me ask you this way: Are there any other 7 text-based counties that experienced the high 8 undervotes in races paired with the governor's race?</p> <p>9 A Are there any other text-based counties -- we 10 have -- to the best of my knowledge, we have all of 11 them. In other words, I don't believe outside of 12 Charlotte, Lee, and Sumter, the attorney general's 13 race, and Sarasota for the CD 13 race, that we have 14 examples that would fit your hypothetical, if I 15 understand you correctly.</p> <p>16 Q All I'm getting at is you can't rule out the 17 possibility that with respect to the higher undervote 18 rates seen in pairings of races with the governor's 19 race, that there is the possibility that voter 20 interest in the governor's race overshadowed voter 21 interest in the other races?</p> <p>22 A That's inconsistent with the Miami-Dade 23 evidence.</p> <p>24 Q I'm limiting my question to text-based formats 25 only. All I'm asking you is, within the text-based ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>377</p> <p>1 Q You're not aware of any published report or 2 study indicating that?</p> <p>3 A Where a mimicked ballot format in a variety of 4 counties correlated with age the way we found them you 5 mean?</p> <p>6 Q No. I just mean in a general sense. Are you 7 aware of any circumstance where an engineering flaw 8 mimicked ballot format effects?</p> <p>9 A I couldn't cite that, no.</p> <p>10 Q Mr. Finley asked you about other documents you 11 might have read in your analysis or in preparation for 12 hearing. And you said that you read the state report; 13 that's the audit report that the state put out?</p> <p>14 A Yesterday morning.</p> <p>15 Q Okay. And you read that report?</p> <p>16 A I read that report quickly, yes.</p> <p>17 Q Mr. Finley didn't ask you about it, but I 18 would like to. The -- there is a statement in the 19 report that says, quote, the test results show that 20 the iVotronic touch screen accurately captures the 21 voter's selection as presented to the voter on the 22 review screens. Is that consistent or inconsistent 23 with your analysis today?</p> <p>24 A Consistent.</p> <p>25 Q If you don't mind, I would like to spend just ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>378</p> <p>1 a couple of minutes on this priming effect theory that</p> <p>2 you discussed today. I'm only going to talk about</p> <p>3 things that weren't discussed by the other counsel.</p> <p>Now, the priming effect only occurs on touch screen</p> <p>4 machines; correct?</p> <p>5 A I don't know.</p> <p>6 Q At least in terms of your observations, we're</p> <p>7 talking about priming effect occurring on touch screen</p> <p>8 machines?</p> <p>9 A In a narrow sense we're looking at priming</p> <p>10 effects across multiple pages. That -- the idea of</p> <p>11 multiple pages doesn't exist in the same way as with</p> <p>12 optical scan voting. Whether there is other priming</p> <p>13 effects in optical scan voting, I don't know.</p> <p>14 Q I'm not asking you about optical scanning. I</p> <p>15 just want to know, in this context, we're talking</p> <p>16 about priming effects in touch screen voting; that's</p> <p>17 the basis of your analysis; correct?</p> <p>18 A Yes.</p> <p>19 MR. HIRSCH: Objection, Your Honor. We're</p> <p>20 supposed to be doing cross. By admission he's</p> <p>21 going outside the scope of direct, and he says he</p> <p>22 wants to enter into areas previously not discussed.</p> <p>23 MR. BURHANS: I'm asking about the priming</p> <p>24 effect theory that was discussed; I'm just not</p> <p>25 ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>380</p> <p>1 you developed?</p> <p>2 A In collaboration with coauthors, yes.</p> <p>3 Q And when did you and your coauthors</p> <p>4 collaborate to develop that priming effect theory?</p> <p>5 A We started on November 9th, I would say. We</p> <p>6 didn't call it priming at that point. But we started</p> <p>7 to develop some initial work on November 9th.</p> <p>8 Q So since you developed this theory on November</p> <p>9 9th, this theory has not been tested in other</p> <p>10 elections; correct?</p> <p>11 A We didn't develop a theory on November 9th;</p> <p>12 that's when we started work on this project. Have we</p> <p>13 tested this in other elections? No.</p> <p>14 Q Are there any published studies with respect</p> <p>15 to the priming effect, as you've testified to today?</p> <p>16 A I suspect that the candidate name order</p> <p>17 literature that Professor Stewart discussed yesterday</p> <p>18 is probably related in some way to this effect. So</p> <p>19 are there studies that directly examine the precise</p> <p>20 way we phrased it? No. But is it true that other</p> <p>21 sorts of analyses fall within this type of way of</p> <p>22 approaching voters choices, I would say the answer is</p> <p>23 yes.</p> <p>24 Q Are you aware of anything in the body of</p> <p>25 relevant literature that would alert elections</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p>379</p> <p>1 repeating what was previously asked.</p> <p>2 THE COURT: You are rapidly gaining a</p> <p>3 reputation of asking the same question over and</p> <p>4 over and over. This is the third time you've come</p> <p>5 back to this question. He said he's not an expert</p> <p>6 in this. Ask it one more time; he's going to</p> <p>7 answer it, and we're going to move on.</p> <p>8 MR. BURHANS: I will move on. I'm not trying</p> <p>9 to be difficult.</p> <p>10 THE COURT: I'm just saying the pattern you're</p> <p>11 getting into.</p> <p>12 MR. BURHANS: I understand. I will break that</p> <p>13 pattern.</p> <p>14 BY MR. BURHANS:</p> <p>15 Q Sir, would you agree that touch screen voting</p> <p>16 technology is a relatively new or emerging technology?</p> <p>17 A I'm not an expert in technology. I can tell</p> <p>18 you that, to the best of my recollection, it's newer</p> <p>19 than many other forms of voting.</p> <p>20 Q Would you agree that the body of scientific</p> <p>21 literature on touch screen technology is relatively</p> <p>22 emerging and perhaps even in a state of flux?</p> <p>23 A I don't know the level of literature on this</p> <p>24 in scientific engineering fields.</p> <p>25 Q Is the priming effect theory something that</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p>381</p> <p>1 officials to the effect of your priming hypothesis?</p> <p>2 A Am I aware of literature that election</p> <p>3 officials read?</p> <p>4 Q Well anything in the body of</p> <p>5 publicly-available literature that an election</p> <p>6 official can read that would alert them to the</p> <p>7 potential priming effect that you've testified to?</p> <p>8 A I understand. Nothing that I know of.</p> <p>9 Q Is there anything in the body of relevant</p> <p>10 literature that would -- that an election official can</p> <p>11 consult in order to address the priming effect?</p> <p>12 A They can consult with us.</p> <p>13 Q And you're not aware of any government rule or</p> <p>14 regulation that addresses the priming effect?</p> <p>15 A I'm not aware of any such rule or regulation,</p> <p>16 no.</p> <p>17 Q Now, turning to the discussion of voter</p> <p>18 confusion. When you talk about voter confusion,</p> <p>19 you're not really saying that voters were actually</p> <p>20 confused. Isn't it more correct to say that it's</p> <p>21 the -- the confusion is really what you consider to be</p> <p>22 the voter's atypical response to the presentation of</p> <p>23 the ballot on the touch screen?</p> <p>24 A I don't want to use "confusion" in the</p> <p>25 clinical way. Obviously we're not in the voters'</p> <p>ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p style="text-align: center;">382</p> <p>1 heads, and I can't speak to exactly the psychological 2 mechanisms behind this. They are consistent, from my 3 back -- from my -- when I use the word "confusion," it's as a nonexpert -- I think the behavior is consistent with someone who didn't see a ballot race, and I'm calling that confusion. 6 Q Thank you. Now, since you didn't poll any 8 Florida voters or Sarasota County voters, you can't 9 say whether any voters were actually confused; can 10 you, meaning they didn't understand how to cast a 11 vote? 12 A I don't think any poll would ever reveal that 13 information. 14 Q Now, since you didn't conduct a survey of any 15 Sarasota voters, you also can't determine how they 16 actually voted in this election; correct? 17 MR. HIRSCH: Objection. Your Honor, we're 18 seeing this endless so-called cross-examination 19 from friendly counsel in order to run the clock -- 20 MR. BURHANS: I'm not running the clock. That 21 wasn't repeating a question. 22 THE COURT: He's an expert. He can ask the 23 question. 24 BY MR. BURHANS: 25 Q Since you didn't conduct a survey of Sarasota ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">384</p> <p>1 Christine Jennings that were not counted, if any, in 2 the 13th congressional district race? 3 A Cast, meaning the person pushed the button, 4 and nothing -- and it was not counted when it should 5 have? 6 Q Yes, sir. 7 A I think it follows from my report that that 8 number is zero. 9 MR. BURHANS: Thank you. No further 10 questions. 11 MR. WINSOR: No cross from the state 12 defendants. 13 MR. CODY: Very quickly, Your Honor, on 14 redirect. 15 REDIRECT EXAMINATION 16 BY MR. CODY: 17 Q Professor, you talked about using the 2006 18 voter file. Has the voter file for the November 2006 19 election been released yet by the Department of State, 20 to your knowledge, showing who actually voted in the 21 election? 22 A No. To my knowledge it's not yet available. 23 Q So it would be impossible for you to do a 24 correlation, using a list of who voted in 2006, in 25 order to get the results that you talked about today? ACCURATE STENOGRAPHY REPORTERS, INC.</p>
<p style="text-align: center;">383</p> <p>1 voters, you can't tell how any of the voters actually 2 voted in this election? 3 A I don't think that follows. 4 Q You didn't conduct a survey of any Sarasota 5 voters to determine how they voted in this election; 6 correct? 7 A Surveys aren't capable of that. 8 Q You can't call a list of voters and ask them 9 how they voted in the election? 10 A Of course I could do that, but I wouldn't know 11 if the person was being honest. 12 Q Are you assuming that the voters would lie, 13 sir? 14 A I'm not making any assumptions. 15 Q Okay. I will move on. Mr. Hirsch asked you 16 to assume computer malfunction when asking you about 17 the written report that you did prior to this 18 litigation; do you remember that, sir? 19 A I remember it, yes. 20 Q Now, are you aware of any evidence of computer 21 malfunction in this case? 22 A I'm aware only that the parallel tests would 23 suggest there is no malfunction. 24 Q Can your analysis, as you've described it 25 today, tell us the number of votes that were cast for ACCURATE STENOGRAPHY REPORTERS, INC.</p>	<p style="text-align: center;">385</p> <p>1 A That's correct. The data are not available. 2 Q And so in light of that, is that why you used 3 the 2004 data? 4 A It's the most recent data available, that is 5 correct. 6 Q Now, the ballot images that Mr. Hirsch asked 7 you about, you noted that they were scrambled. Do you 8 know if they are scrambled, or do you know why they're 9 scrambled? 10 A I assume it's to protect anonymity of voters, 11 so that when the first voter arrives at a precinct, if 12 someone notices who it is, we could not figure out how 13 this individual voted. 14 Q I would like you to turn to page 11 of the 15 report, your December 3rd report. 16 A (Witness complies). Yes, sir. 17 Q Now, Mr. Hirsch asked you about the sentence 18 that said, this paper is purely a statistical exercise 19 and as such cannot directly address the possibility 20 that engineering lies beneath the undervote rates we 21 studied; do you recall that? 22 A Yes. 23 Q Do you recall that he asked you to read a 24 sentence on page 12 that begins, ultimately no 25 statistical analysis of observed voting data can ACCURATE STENOGRAPHY REPORTERS, INC.</p>

<p>386</p> <p>1 distinguish between ballot format effects and 2 engineering flaws that mimic ballot format effects; do 3 you recall that? 4 A I recall that. 5 Q Is there a sentence between those two 6 sentences? 7 A Yes. 8 Q Could you read that for me. 9 A Yes, I will. It's at the bottom of page 11: 10 However, to the extent that voter intentions or ballot 11 formats appear to explain observed undervote rates, 12 the conjecture that engineering flaws are responsible 13 for the CD 13 undervote rate becomes more difficult to 14 sustain. 15 Q And so is it your opinion that an engineering 16 flaw is, in light of all the analysis you've done 17 here, less likely than the analysis that you've done 18 to show what you're terming to be voter confusion? 19 A Yes. 20 Q Okay. Are you testifying, though, that every 21 voter who went into the election booth and saw what 22 was, I believe, seven whatever, the Charlotte County 23 screen -- the Sarasota County screen -- that every 24 voter was confused by that? 25 A No. Certainly not. ACCURATE STENOGRAPHY REPORTERS, INC. </p>	<p>388</p> <p>1 asked this, that shading effects are the first things 2 that came to mind. The answer is yes. 3 Q Now, I would like you to take a look at 16 of 4 39 of your presentation. 5 A Yes, sir. 6 Q Now, on the table marked CD 13, is it your 7 testimony that every person who was 75 years or older 8 was confused? 9 A Absolutely not. 10 Q And what does the upward sloping line mean in 11 terms of the increasing numbers of persons who were 12 over the age of 76? 13 A It means that precincts with greater fractions 14 of people who are at least 76 years old had higher 15 undervote rates. 16 MR. CODY: No further questions, Your Honor. 17 THE COURT: Thank you. You may step down. 18 MR. CODY: Your Honor, in case we have not, I 19 would ask that Exhibit 8, the presentation that we 20 put up, be accepted into evidence. 21 THE COURT: Everybody has copies now; right? 22 MR. CODY: Yes. Everybody has gotten -- 23 THE COURT: Any objection? So received. 24 (Exhibit No. 8 was received in evidence). 25 MR. CODY: Thank you, sir. ACCURATE STENOGRAPHY REPORTERS, INC. </p>
<p>387</p> <p>1 Q Now, could you take a look at page 10 of 39 of 2 the Exhibit 8, your December 20th presentation. 3 A Yes. 4 Q Now, in the original -- let me ask you, is 5 this chart created by a piece of software? 6 A Yes. 7 Q And does that software assign the colors? 8 A Yes. 9 Q Now, did everybody who voted in the District 10 21, or the circuit judge 21 race, all vote the same 11 way? 12 A No. 13 Q So, to your knowledge, when you prepared this 14 chart, were there different shades of green indicating 15 a vote for the judge or a vote against the judge or a 16 vote for one candidate or a vote for the other 17 candidate? 18 A Yes. 19 Q And is that reflected on this chart? 20 A Not to my eyes. 21 Q But was it reflected in the data? 22 A The answer is yes. 23 Q Okay. And so is that a -- more a function of 24 the color printer than a function of your data set? 25 A As in fact I mentioned immediately upon being ACCURATE STENOGRAPHY REPORTERS, INC. </p>	<p>389</p> <p>1 THE COURT: How many more witnesses do y'all 2 have? 3 MR. CODY: Your Honor -- 4 MR. DeGRANDY: In terms of evidence, we've 5 concluded our presentation. We wanted to inquire 6 of Your Honor, if you wanted to provide the 7 opportunity to do a briefing and file written 8 closing statements on the matter? 9 THE COURT: Well I would love to have 10 argument, but I can't see this group getting done 11 by three o'clock on an argument. 12 MR. DeGRANDY: Your Honor, I absolutely agree. 13 THE COURT: That's stretching the imagination. 14 MR. DeGRANDY: That's why I suggested written 15 briefs. 16 THE COURT: I would prefer 17 simultaneously-written briefs. 18 MR. DeGRANDY: When is your pleasure? 19 THE COURT: What about Friday? 20 MR. DeGRANDY: Sure. 21 THE COURT: Friday noon? 22 MR. COFFEY: Yes, sir. 23 MR. DeGRANDY: Could you give us Friday 5:00, 24 that would be good. 25 THE COURT: Friday noon is better for me. ACCURATE STENOGRAPHY REPORTERS, INC. </p>

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 1 MR. DeGRANDY: Yes, sir.
 2 (The proceedings were adjourned at 2:50 p.m.)
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ACCURATE STENOGRAPHY REPORTERS, INC.

391
CERTIFICATE OF REPORTER
 2 STATE OF FLORIDA)
 3 COUNTY OF LEON)
 4 I, SARAH B. GILROY, Registered Professional Reporter,
 5 certify that the foregoing proceedings were taken before
 6 me at the time and place therein designated; that my
 7 shorthand notes were thereafter translated under my
 8 supervision; and the foregoing pages numbered 1 through
 9 390 are a true and correct record of the aforesaid
 10 proceedings.
 11
 12 I further certify that I am not a relative, employee,
 13 attorney or counsel of any parties, nor am I a relative
 14 or employee of any of the parties' attorney or counsel
 15 connected with the action, nor am I financially
 16 interested in the action.
 17 DATED this ____ day of December, 2006.
 18
 19
 20
 21
 22 SARAH B. GILROY, RPR, CRR
 Notary Public
 1-800-934-9090
 850-878-2221
 24 My Commission Expires: 02-02-10
 My Commission Number: DD 075718
 25
 ACCURATE STENOGRAPHY REPORTERS, INC.

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4. The certificates issued by the Florida Department of State for Unity 2.4.4.2.
5. Advertisement by the Sarasota County Supervisor of Elections regarding the logic and accuracy testing of the County's voting and tabulation equipment to be used in the November 7, 2006, election that was scheduled for testing on October 20, 2006.
6. Certified results of the logic and accuracy testing issued by the Canvassing Board.
7. *Parallel Test Summary Report*
8. *Heron Exhibits*

IN THE CIRCUIT COURT OF THE
SECOND JUDICIAL CIRCUIT IN
AND FOR LEON COUNTY, FLORIDA.

CHRISTINE JENNINGS, nominee of
the Democratic Party for Representative
in Congress from the State of Florida's
Thirteenth Congressional District,

CASE NO. 2006 CA 2973

Plaintiff,

vs.

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher, and State Senator Daniel
Webster, et al.,

Defendants.

IN RE:	HEARING
BEFORE:	HONORABLE WILLIAM L. GARY (Circuit Court Judge)
DATE:	Tuesday, November 21, 2006
TIME:	Commenced: 10:30 a.m. Concluded: 11:15 a.m.
LOCATION:	Courtroom 2F Leon County Courthouse Tallahassee, Florida
REPORTED BY:	LIZ CLEARY, RPR Notary Public in and for State of Florida at Large

ASSOCIATED COURT REPORTERS

Post Office Box 306 * Tallahassee, Florida 32302
Phone (850) 222-5508 * Fax (850) 222-2428

Appendix 1

1 of the Supervisor of Elections. As far as any tests they
2 are going to conduct Tuesday, that is great, but I do want
3 the Supervisor to make available an opportunity for the
4 experts of either candidate, the Plaintiff or Mr. Buchanan,
5 to be there, observe. And I'm sure we will be addressing it
6 again, because whatever they do is going to be unacceptable
7 to somebody. But it may answer the question, too. I'm sure
8 hoping it will.

9 Your request for everything to take place by tomorrow
10 is totally out of order. I'm denying your motion to
11 expedite it, however I'm going to require the Defendants to
12 respond to discovery within 15 days.

13 As far as the source code, I'm denying your motion
14 without prejudice. I think ES&S needs an opportunity to be
15 heard. If they are heard, you may get that source code.
16 There is generally ways to get around the public becoming
17 aware what is in the source code. I'm aware of that, and
18 you all know it, too.

19 I think you ought to see if you can work something out
20 on the discovery, but I have a feeling within 15 days we're
21 going to have another hearing, just a wild guess. You do
22 respond to the complaint within ten days. I believe that is
23 the statute. And I believe 106 also rests venue here in
24 Leon County.

25 What have I missed?

1275



FLORIDA DEPARTMENT of STATE

Sue M. Cobb
Secretary of State

For Immediate Release

Contact: Jenny

Nash

November 30, 2006

850.245.6518

jnash@dos.state.fl.us

STATE COMPLETES FIRST TESTING PHASE IN SARASOTA AUDIT

~Voting Machines Accurately Record Votes~

Tallahassee, FL – Secretary of State Sue M. Cobb today announced the first parallel test of the state audit of Sarasota County's voting systems has been successfully completed.

No anomalies were discovered in the machines; they functioned exactly as designed. The audit team, working in conjunction with experts from both campaigns, resolved the handful of variations in Tuesday's parallel test results by first verifying the script then reviewing the video tape of the parallel test. All variations were a result of human error.

"The state is committed to ensuring the integrity of elections in Florida. To that end our comprehensive audit will proceed according to the audit plan," said Secretary Cobb.

The audit continues with the team collating and reviewing election records from the November 7th General Election. A second parallel test will occur on Friday, December 1st. This test will be conducted on machines used in the November election.

The public and representatives of the candidates are invited to observe the second parallel test. The testing will take place from 6:30 a.m. to 7:30 p.m. at:

The Interim Government Operations Center
1001 Sarasota Center Boulevard
Sarasota, FL 34240

###

Appendix 2

12/4/2006

A-642

Certification
Election Systems and Software, Inc.
The ES&S Voting System, Release 4.5, Version 1

On this date, the Department of State certifies *The ES&S Voting System, Release 4.5, Version 1*, submitted by Election Systems and Software, Inc., for purchase or use by County and Municipal Governments of the State of Florida.

This version of the system consists of:

Election Administration:

- Unity Version 2.4.4
 - Election Data Manager (EDM), version 7.2.1.0
 - Ballot Image Manager (Optech), version 3.2.0.0
 - Hardware Programming Manager (HPM), version 5.0.3.1
 - Memory Pack Receiver/Programmer, Revisions C or D w/ firmware version 2.06 or 2.08
 - iVotronic Supervisor Terminal (12" or 15")
 - PEB Data Acquisition Device, Model 1
 - Election Reporting Manager (ERM), version 7.0.0.1
 - Audit Manager, version 7.0.2.0
 - *Optional software*
 - Data Acquisition Manager (DAM), version 6.0.0.0 (for modem communications)
 - iVotronic Image Manager, version 1.2.3.0 (for bitmap system)
- COTS software
 - Optional Oracle 9i, version 9.2.0.1.0 (for use with iVotronic Image Manager)
 - Adobe Acrobat Reader, version 7.0 standard or later
 - Adobe Type Basics 65 or similar font manager
 - RM Cobol, version 7.50 or later
 - Cobol Wow, version 3.12 or later.

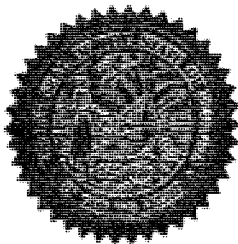
Precinct Count (one or more of the following):

- iVotronic DRE (12" & 15" w/ or w/o ADA), hardware version 1.0 w/ firmware version 8.0.1.2
- *Auxiliary equipment for iVotronic DRE:*
 - PEB Revs: iV1.7b1-PEB-S, iV1.7b1-PEB-V, iV1.7b2-PEB-S, iV1.7b2-PEB-V, iV1.7c-PEB-S, iV1.7c-PEB-V
 - COTS headphones for audio ballots (for use with ADA iVotronic)
 - Communications Pack
 - *Optional iVotronic Supervisor Terminal (12" or 15") (for voter activated method)*
- Optech III-P Eagle, hardware versions B 01-B.06, C-01a-C-01c, C.02a-C.02c, C.03a-C.03c, C.04, C.05, C.06 & C.07
 - WPS Firmware version 1.30
 - Memory Puck, revision C, D, or F w/ APS firmware version 1.52
- *Optional auxiliary equipment for Optech III-P Eagle:*
 - Eagle Modem, Release 1
 - CPS firmware version 1.08a

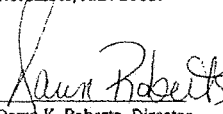
Central / Absentee Count (one or more of the following):

- Optech III-P Eagle (as defined for precinct count)
- Optech IV-C, Model 400, hardware version 2.00 or 2.02 w/ software version 1.05C
 - Recount Utility, software version 1.05rc

This certification is granted pursuant to Section 101.015, Florida Statutes, and Rule Chapter 1S-5, Florida Administrative Code.



Certification # 0505ES&S-01 (Revised)
 Given under my hand, and the Great Seal of the State of
 Florida at Tallahassee, the Capitol, this Tenth day of
 November, A.D. 2005.


 Dawn K. Roberts, Director
 Division of Elections
 Department of State

Appendix 3

1277



FLORIDA DEPARTMENT OF STATE
Sue M. Cobb
Secretary of State

July 17, 2006

Rich Bernstein, State Certification Manager
Election Systems & Software
11208 John Galt Boulevard
Omaha, Nebraska 68137-2364

Regarding certification control number: 0508ES&S-02 (Revision2)

Dear Mr. Bernstein:

Enclosed is the document of certification for the ES&S Voting System "Release 4.5, Version 2." This is a revised certification to add the optional equipment, iVotronic Battery Charger and Compact Flash Multi-Card Reader / Writer as tested by the Division during June 2006. This revision also removes the option for voter activation (i.e. the supervisor terminal at the precinct and the following PEB versions: iV1.7b1-PEB-V, iV1.7b2-PEB-V, iV1.7c-PEB-V).

This revised certificate reflects the version as tested by the Florida Division of Elections. Please note that under this certification all counties and municipalities in Florida may purchase or use this configuration of the system.

This certification applies only to the voting system described on the face of the certificate. Any changes to the configuration of this system, or any component of the system, must be reviewed by the Division prior to purchase or use in Florida to determine if re-certification is required.

A copy of the certificate will be mailed to each supervisor of elections in Florida.

If we can be of further assistance, please do not hesitate to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Dawn K. Roberts".

Dawn K. Roberts, Esq.
Director
Division of Elections

DKR/dcs
Enclosure (1)

Division of Elections
R.A. Gray Building, Room 316 • 500 South Bronough Street • Tallahassee, Florida 32399-0250 •
(850) 245-6200 • FAX (850) 245-6217

Appendix 4

A-644

Certification
Election Systems and Software, Inc.
The ES&S Voting System, Release 4.5, Version 2

On this date, the Department of State certifies *"The ES&S Voting System, Release 4.5, Version 2,"* submitted by Election Systems and Software, Inc., for purchase or use by County and Municipal Governments of the State of Florida.

This version of the system consists of:

Election Administration:

- Unity Version 2.4.4.2
 - Audit Manager, version 7.0.2.0
 - Election Data Manager (EDM), version 7.2.1.0
 - ES&S Ballot Image Manager (ESSIM), version 7.2.0.0
 - Hardware Programming Manager (HPM), version 5.0.3.1
 - COTS OmniDrive or similar PCMCIA interface *(for use with Model 100)*
 - Needham's Electronics EMP-11 Device Programmer w/ES&S 2102 piggyback card *(for use with Model 150)*
 - COTS Zip drive *(for use with Model 650)*
 - San Disk Image Mate or similar compact flash interface *(for use with iVotronic compact flash cards)*
 - Election Reporting Manager (ERM), version 7.0.0.3
 - Optional software
 - Data Acquisition Manager (DAM), version 6.0.0.0 *(for modem communications)*
 - iVotronic Image Manager (iVIM), version 1.2.3.0 *(for bitmap system)*
 - Optional hardware
 - One or more Equinox multi-modem adapters, 4 or 8 ports *(for use with Data Acquisition Manager)*
 - One or more Sealevel Systems COMM+8 PCI serial adapters *(for use with Data Acquisition Manager and a jurisdiction's existing modem bank)*
- COTS software
 - Optional Oracle 9i, version 9.2.0.1.0 *(for use with iVotronic Image Manager)*
 - Adobe Acrobat Reader, version 7.0 Standard or later
 - Adobe Type Basics 65 or similar font manager *(for Helvetica fonts)*
 - RM Cobol, version 7.50 or later
 - Cobol Wow, version 3.12 or later
 - Norton Anti Virus 2004 or equivalence

Precinct Count (one or more of the following):

- Model 100 Precinct Ballot Counter, hardware version 1.3,
 - w/firmware version 5.0.0.0
 - Auxiliary equipment for Model 100:
 - Optional internal modem
 - Metal Ballot Box
- iVotronic DRE (12" & 15" w/ and w/o ADA), hardware version 1.0
 - w/ firmware version 8.0.1.2
 - Auxiliary equipment for iVotronic DRE:
 - PEB Rev.: iV1.7b1-PEB-S iV1.7b1-PEV-V iV1.7b2-PEB-S
iV1.7b2-PEB-V iV1.7c-PEB-S iV1.7c-PEB-V
 - COTS headphones for audio ballots *(for ADA iVotronics)*
 - Communications Pack
 - Optional iVotronic Supervisor Terminal (12" or 15") *(for voter activated method)*

Central / Absentee Count (one or more of the following):

- Model 150 Central Ballot Scanner, hardware version 1.1
 - w/ firmware version 2.1.2.0
 - Two COTS parallel printers
- Model 650 Central Count Ballot Tabulator, hardware version 1.0 or 1.1
 - w/ firmware version 2.1.0.0
 - Two COTS parallel printers

This certification is granted pursuant to Section 101.015, Florida Statutes, and Rule Chapter 1S-5, Florida Administrative Code.



Certification # 0508ES&S-02 (Revised)
 Given under my hand, and the Great Seal of the State of
 Florida at Tallahassee, the Capitol, this Tenth day of
 November, A.D. 2005.

Dawn K. Roberts, Director
 Division of Elections
 Department of State
 State of Florida

1279



FLORIDA DEPARTMENT OF STATE
Sue M. Cobb
Secretary of State

September 8, 2006

Rich Bernstein, State Certification Manager
Election Systems & Software
11208 John Galt Boulevard
Omaha, Nebraska 68137-2364

Regarding certification control number: 0505ES&S-01 (Revision3)

Dear Mr. Bernstein:

Enclosed is the document of certification for the ES&S Voting System "Release 4.5, Version 1." This is a revised certification reflecting the addition of Election Reporting Manager (ERM) version 7.0.0.1 with service release 1 which includes an enhancement to the Undervote Report Utility.

This revised certificate reflects the version as tested by the Florida Division of Elections. Please note that under this certification all counties and municipalities in Florida may purchase or use this configuration of the system.

This certification applies only to the voting system described on the face of the certificate. Any changes to the configuration of this system, or any component of the system, must be reviewed by the Division prior to purchase or use in Florida to determine if re-certification is required.

A copy of the certificate will be mailed to each supervisor of elections in Florida.

If we can be of further assistance, please do not hesitate to call.

Sincerely,

A handwritten signature in black ink that reads "Dawn Roberts".

Dawn K. Roberts, Esq.
Director
Division of Elections

DKR/dcs
Enclosure (1)

Division of Elections
R.A. Gray Building, Room 316 • 500 South Bronough Street • Tallahassee, Florida 32399-0250 •
(850) 245-6200 • FAX (850) 245-6217

A-646

1280



FLORIDA DEPARTMENT OF STATE

Sue M. Cobb
Secretary of State

September 11, 2006

Mr. Richard Bernstein
Election Systems and Software, Inc.
11208 John Galt Blvd.
Omaha, NE 68137

Ref: **ES&S Voting Systems, Release 4.5, Version 1**
ES&S Voting Systems, Release 4.5, Version 2

Re: Service Release 1 for ERM version 7.0.0.1 and 7.0.03

Dear Mr. Bernstein:

Per the Florida Voting Systems Standards (FVSS), this letter serves to document the Test Status Report and the Qualification Test Report for ERM Service Release 1 (SR1).

Test Status Report:

Based on the following:

- Acceptable review of the Service Release 1 source code for the Election Reporting Manager (ERM) undervote utility (UNDRVOTE.EXE) performed by the Florida Division of Elections
Acceptable results from the Florida qualification tests performed at Pasco and Escambia Counties
- Complete and acceptable application for Florida certification

It is the determination of the Bureau of Voting Systems Certification that the results of the qualification tests provide objective evidence that the referenced voting systems are in compliance with the FVSS and applicable Florida Statutes.



Public invited to attend logic and accuracy testing

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(SARASOTA, FL, October 17, 2006) - Supervisor of Elections Kathy Dent invite public to attend logic and accuracy testing of the county's voting and tabulating to be used in the November 7, 2006, General, Special, City of North Port, and C Venice General elections.

The testing is scheduled for Friday October 20, 2006, at 9 a.m. at the office of the Supervisor of Elections in the Terrace Building at 2001 Adams Lane, Sarasota,

Logic and accuracy testing is performed prior to every election on a random sample of all the voting machines that will be fielded on election day to ensure that they are operating and recording accurately. Testing of the tabulating equipment and election reporting software is also conducted prior to every election.

Appendix 5



PUBLIC MEETING NOTICE PUBLIC LOGIC AND ACCURACY TESTING OF VOTING AND TABULATING EQUIPMENT

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Submit a Question

The Sarasota County Canvassing Board will convene at the office of the Supervisor of Elections, 2001 Adams Lane, Sarasota, Florida, at 9:00 a.m. on Wednesday, November 8, 2006. The Board is convening for the logic and accuracy testing of the absentee ballot tabulating equipment, that will be used in the November 7, 2006, General, Special and Municipal elections.

Florida law requires each supervisor of elections to test the county's voting and tabulating machines prior to each election to ensure that the equipment will correctly count all votes. Voters are encouraged to attend and observe these logic and accuracy tests.

In accordance with the Sunshine Law of Florida, the meeting will be open to the public.

NOTE: §286.0105, Florida Statutes, states that if a person decides to appeal any decision of a board, agency, or commission with respect to any matter considered at a meeting hearing, he or she will need a record of the proceedings, and that, for such purpose, the board or agency may need to ensure that a verbatim record of the proceedings is made, which record shall include the testimony and evidence upon which the appeal is to be based.

CERTIFICATE OF TESTING

The undersigned, comprising the Sarasota Canvassing Board for the November 7, 2006, General and Special elections, do hereby certify that:

A Logic and Accuracy test was held in the office of the Supervisor of Elections at 101 South Washington Boulevard, Sarasota on October 20, 2006, for testing voting equipment and tabulation equipment for said election.

The Canvassing Board observed the Logic and Accuracy test and compared the results with manually calculated/known totals for each issue. The Board verified the correctness of all totals, including the number and type of ballots cast, number of votes cast for each issue, and the number of undervotes and overvotes.

The Supervisor of Elections has custody of all test materials and has taken steps to ensure the security of said materials in accordance with Florida Statutes.

KATHY DENT
Name

Kathy Dent - SOE
Signature
for the Board

Name

Signature

Name

Signature

Dated this 20th day of October, 2006.

Appendix 6

CERTIFICATE OF TESTING

The undersigned, comprising the Sarasota Canvassing Board for the November 7, 2006, General, Special and Municipal elections, do hereby certify that:

A Logic and Accuracy test was held in the office of the Supervisor of Elections at 101 South Washington Boulevard, Sarasota on November 1, 2006, for testing voting equipment and tabulation equipment for said election.

The Canvassing Board observed the Logic and Accuracy test and compared the results with manually calculated/known totals for each issue. The Board verified the correctness of all totals, including the number and type of ballots cast, number of votes cast for each issue, and the number of undervotes and overvotes.

The Supervisor of Elections has custody of all test materials and has taken steps to ensure the security of said materials in accordance with Florida Statutes.

Kathy Dent
Name

Kathy Dent - SOE
Signature For the Board

Name

Signature

Name

Signature

Dated this 1st day of November, 2006.



FLORIDA DEPARTMENT *of* STATE

Division of Elections

**Parallel Test Summary Report
for
Sarasota County, FL**

**November 7, 2006 General Election
Using
Election Systems and Software, Inc.
Unity Version 4.5, Version 2**

December 18, 2006

Prepared by:

Bureau of Voting Systems Certification

drd/

**Parallel Test Summary Report
for
November 7, 2006 General Election held in Sarasota County, FL
using
Election Systems and Software, Inc.
Unity 4.5 Version 2
Audit location: Sarasota, FL
Test Dates: 11/28/06 to 12/01/06**

EXECUTIVE SUMMARY:

Florida Division of Elections conducted two parallel tests of the iVotronic touchscreens in an effort to replicate the undervote count observed for the 13th Congressional District race during the November 7th, 2006 General Election held in Sarasota County. The parallel tests focused on the iVotronic touchscreen's ability to accurately record a voter's selections as presented to the voter on the touchscreen's ballot review pages. In addition, the parallel tests also examined various complaints regarding a voter's ability or difficulty in making his or her vote selections.

Bureau of Voting Systems Certification (BVSC) identified four touchscreens to examine, one each from four precincts selected by the Jennings and Buchanan organizations (two precincts each) plus a fifth touchscreen to be used for ad hoc testing. Sarasota County Elections Staff provided BVSC with the election day ballot images and event logs for the five selected touchscreens. BVSC utilized these records to develop the test scripts (i.e., the number of ballots to cast, the vote selections for each ballot, and the timeline for casting the ballots.) BVSC designed the test scripts to accomplish two objectives: to replicate election day with respect to the ballots cast and the frequency of use for each machine (except the ad hoc unit) and to identify any latent issues with respect to making a vote selection. However, the selected touchscreens did not become available for testing until December 1, 2006. Therefore, the first of the two parallel tests utilized five touchscreens from the pool of touchscreens that were not deployed during this election. This pool of touchscreens is the same election-ready units that were available as replacement units during this election.

Division of Elections (DOE) conducted the first parallel test on November 28, 2006 and the second parallel test on December 1, 2006. The second parallel test utilized the five selected units that were deployed on election day. The first parallel test results were compared to the expected election day results with reconciliation of the differences taking place during November 28th and 29th, 2006 in the presence of technical representatives from both the Jennings and Buchanan organizations and the media. All the vote differences experienced during this test were the result of two script errors and eight vote selections that were not entered according to the test script. The second parallel test results were reconciled on December 5, 2006 in the presence of the Jennings' technical representative and the media. The technical representative for the Buchanan organization was not present. All the vote differences experienced during this test were the result of one incorrectly documented vote selection for the ad hoc machine and two vote selections that were not according to the test script. In addition, a review of both parallel test videos did not identify any latent issues with respect to making a vote selection.

In summary, the test results show that the iVotronic touchscreens accurately captures the voter's selection as presented to the voter on the review screens. These tests did not identify any latent problems with respect to vote selection or the accuracy of the touchscreens' tabulation of the votes as cast.

BACKGROUND:

Sarasota County, Florida experienced an unexpected number of undervotes for the 13th Congressional District race during the 2006 General Election. Although a number of factors may have contributed to this undervote total, interested parties are concerned that the undervote for this race suggests that the voting equipment may not have correctly captured the voters' selection.

In response to the Sarasota County Supervisor of Elections' request and at the direction of the Secretary of State, the Division of Elections (DOE) developed an extensive audit plan to ascertain if a process, definition, machine, or tabulation anomaly contributed to this contest's undervote total. As part of DOE's audit, BVSC utilized a test activity known as a "parallel test." Typically, a parallel test involves a random selection of voting devices from the population of voting devices destined for deployment on election day. This test sample would be segregated from the actual deployed devices, but otherwise would undergo the same election day activities in "parallel" with the deployed voting devices, except the voters would consist of a test team and the ballots cast would be defined by a predetermined test script. The intent of this parallel activity is to ascertain the accuracy and reliability of the deployed voting devices with consideration given to ballot style, layout, coding, demographics, and operation.

OBJECTIVE and SCOPE:

The application of the parallel test technique for this audit deviated from the classical parallel test in that the test scripts were based on the audit data extracted from a sample of iVotronic touchscreen devices. In addition, the test script also took into consideration the voting experience of several voters that were described in various news articles. Because documents describing voter complaints were not available for review, DOE relied solely on the published accounts bearing in mind that some of these accounts actually verified the voter's acknowledgement to undervote the 13th Congressional District race.

The audit data for the iVotronic touchscreen consists of two records: the event log and the ballot image file. The event log contains the timing element for each ballot cast. The ballot image file contains the voter selections as they appeared on the review screen at the time the voter pressed the "VOTE" button. However, the arrangement of the ballot images is random. Therefore, these ballot images cannot be associated with the time that the ballot was cast.

BVSC requested each candidate to provide a list of two to four precincts that they believed warrant close examination. From this list of precincts, BVSC staff identified four iVotronic touchscreens (two from Jennings' list and two from Buchanan's list) that experienced the highest undervote within their respective precinct. This selection should enhance the probability of revealing the undervote anomaly should it exist. BVSC personnel then developed a test script from the audit data extracted from each of these machines. The four iVotronic touchscreens and their precinct are:

iVotronic SN #	Precinct	Precinct selected by:
V0105192	105	Jennings' organization
V0106437	118	Jennings' organization
V0117973	76*	Buchanan's organization
V0106866	113*	Buchanan's organization

* Note: The Buchanan organization recommended a random selection. BVSC performed this random selection utilizing MS Excel. The Jennings' organization also identified precincts 117 and 31 in their initial selection and later added precincts 44 and 74.

TEST PREPARATION:

BVSC conducted two parallel tests each consisting of four iVotronic touchscreens that followed a predetermined test script and a fifth iVotronic machine that underwent an ad hoc vote selection process focused on the 13th Congressional District race. BVSC developed the test scripts based on the event log and ballot images from the four iVotronic touchscreens identified above. The first parallel test utilized a random selection of touchscreens from the pool of touchscreens that were not deployed during the general election. This pool consisted of six non-ADA touchscreens and eighteen ADA touchscreens. An ADA touchscreen is identical to a non-ADA touchscreen except that the ADA touchscreen has an optional audio ballot capability and includes a three-button voter interface just below the touchscreen. Sarasota County has no restriction regarding the utilization of an ADA touchscreen for regular voting. Thus, such a device may be used by a vision impaired voter as well as those voters that do not require the ADA enhancement. BVSC included an ADA touchscreen in this first parallel test based on this information and the limited number of non-ADA units that were in the pool of units that were not deployed during this election. BVSC selected one ADA iVotronic touchscreen and four non-ADA iVotronic touchscreens from this pool. The one ADA touchscreen and three non-ADA touchscreens were tested using the predetermined scripts and the remaining touchscreen served as the ad hoc test article. The ad hoc test script was a random vote pattern along with a specific vote pattern for the 13th Congressional District race, all of which was documented by a second individual on preprinted blank sample ballots. The ad hoc tester randomly selected a vote pattern from ten predetermined vote patterns for the 13th Congressional District race for each ballot cast. BVSC tabulated the ad hoc votes that were manually recorded on the sample ballots and compared the totals with the tabulated results that were printed from the ad hoc unit. The election night results for the selected deployed touchscreens served as the baseline results for comparison with the first and second parallel test results.

The five non-deployed touchscreens selected for the first parallel test are:

iVotronic SN #
 V0105917
 V0106549
 V0106923
 V0105124
 V0106978 (ADA)

The second parallel test utilized the four actual iVotronic touchscreens deployed on election day plus a fifth touchscreen from precinct 117 (SN # V0106366) for the ad hoc exercise. An alternate consideration was precinct 31 (SN # V0106117) which served as a backup test unit should one or more touchscreens fail during the second parallel test. For the second parallel test, BVSC used the same master personalized electronic ballots (PEB), poll worker activated PEBs, and compact flash cards that were used by these machines on Election Day.

AD HOC Vote Patterns:**Vote Pattern B-1**

Select Jennings the first time the race is presented to the voter.
Return to the race from the review screen after all other selections are made by paging back and change final selection to Buchanan.

Verify Buchanan is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern B-2

Select Jennings the first time the race is presented to the voter.
Return to the race directly from the review screen after all other selections are made and change final selection to Buchanan.

Verify Buchanan is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-1

Select Jennings the first time the race is presented to the voter.
Return to the race from the review screen after all other selections are made by paging back and verify selection is still Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-2

Select Jennings the first time the race is presented to the voter.
Return to the race directly from the review screen after all other selections are made and verify selection is still Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-3

Select Buchanan the first time the race is presented to the voter.
Return to the race from the review screen after all other selections are made by paging back and change final selection to Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-4

Select Buchanan the first time the race is presented to the voter.
Return to the race directly from the review screen after all other selections are made and change final selection to Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-5

Do not make a selection the first time the race is presented to the voter.
Return to the race from the review screen after all other selections are made by paging back and change final selection to Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern J-6

Do not make a selection the first time the race is presented to the voter.
Return to the race directly from the review screen after all other selections are made and change final selection to Jennings.

Verify Jennings is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern U-1

Select Jennings the first time the race is presented to the voter.
Return to the race from the review screen after all other selections are made by paging back and change final selection to an undervote.

Verify an undervote is the selection indicated on the review screen prior to casting the ballot.

Vote Pattern U-2

Select Jennings the first time the race is presented to the voter.
Return to the race directly from the review screen after all other selections are made and change final selection to an undervote.

Verify an undervote is the selection indicated on the review screen prior to casting the ballot.

Note: Vote pattern J-4 was in error for the first parallel test. The first instruction "Select Buchanan..." actually stated "Select Jennings..." BVSC corrected the vote pattern (correct version shown above) for the second parallel test.

ELECTION SETUP:

DOE conducted the parallel tests at Sarasota's Interim Government Operations Center (IGOC) located at 1001 Sarasota Center Blvd in Sarasota, Florida. The setup for both parallel tests involved placing the 12 inch iVotronic touchscreen in a vertical orientation mounted on a modular wall unit. This wall unit is in a small room located in the Sarasota Elections storage facility within the IGOC. That room served as the test area and contained windows on two parallel sides with the modular wall being located below the windows on one side. This allowed the public to witness the test team's interaction with the touchscreens from the opposite set of windows. This arrangement also facilitated video taping the test and the observations by the designated representatives from both the Jennings and Buchanan organizations. A video production company utilized five cameras w/monitors to record the testing with one camera/monitor devoted to each touchscreen. Sarasota election staff also located two additional wide screen monitors in the public viewing area. Thus, the public was able to observe all five monitors located in the test area along with the two large monitors in the public area and also directly observe the interactions of the test team with the touchscreens. Two members of the test team were positioned to one side of each touchscreen. One team member made selections per the test script or randomly voted on the ad hoc unit while the second team member documented the actions taken. The test team consisted of twelve volunteers from the Division of Elections, ten of which were located in the test area and the remaining two serving as rotating replacements. The majority of the volunteers did not have any prior experience with touchscreens. BVSC staff gave the test team a brief 15 minute orientation just prior to beginning the first parallel test. In addition, the test team had no prior test experience as evidenced by its lack of documentation and note taking during the first parallel test. Based on the constructive feedback provided by the Jennings organization and the experience gained from the first parallel test, the test team substantially improved its test documentation during the second parallel test.

The iVotronic serial numbers, test script identification, and camera position were as indicated below:

1st Parallel Test – Tuesday November 28, 2006

Non-deployed		
iVotronic Sn #	Camera #	Script based on Precinct # / (iVo Sn #)
V0105917	1	n/a <i>ad hoc test script</i>
V0106549	2	105 / (V0105192)
V0106923	3	118 / (V0106437)
V0105124	4	113 / (V0106866)
V0106978 (ADA)	5	76 / (V0117973)

2nd Parallel Test – Friday December 1, 2006

Deployed		
iVotronic Sn #	Camera #	Precinct
V0106366	1	117 <i>ad hoc test script</i>
V0105192	2	105
V0106437	3	118
V0106866	4	113
V0117973	5	76

Key Elements:

A number of media reports described problems that several Sarasota voters encountered in making their selections and/or in making corrections to their selections as presented on the review screens. BVSC utilized the test scripts and the ad hoc script to replicate the published anomalies. Although a number of these voters indicated a problem with their initial and final selection for the 13th Congressional District race, the primary focus of the parallel tests is the review screens. The review screens present the voter with the voter's selections. It is this review screens' list of voter selections that the iVotronic records when the voter presses the "VOTE" button to cast the ballot. Therefore, the primary question concerning the accuracy of the iVotronic touchscreen is whether the review screens as presented to the voter and ultimately verified and cast by the voter is in fact what was stored as the ballot image. All other issues involving the vote selection process do not alter the fact that it is the selections that are presented on the review screens that are ultimately cast and tabulated. Thus, a review screen that shows a selection for any candidate and/or measure that is not captured in the ballot image is a machine error. Likewise, any review screen that does not show a selection that is captured within the ballot image is also a machine error. The vote selection process does not capture that selection as a vote until the voter advances through all the review pages and has had an opportunity to observe the voter's selections. Then, and only then, will the vote button become enabled and allow the voter to cast their ballot. Upon reaching the review screen, an undervote is visually presented to the voter as "No selection made" and with the contest checkbox left empty. A third visual report is provided on the non-ADA touchscreens with the "No selection made" in a red text on a white background.

Results:

The initial results from the first parallel test noted the following:

1st Parallel Test – Tuesday November 28, 2006

Non-deployed

iVotronic Sn #	Script	Variance	Resolution
V0105917	<i>ad hoc test script</i>	None	
V0106549	V0105192	1 extra vote for Jennings 1 less undervote 1 extra vote for Carusone 1 less vote for Klos	Ballot 40, Undervote was voted for Jennings Cause is same as noted for ballot 40 Ballot 35, Vote for Klos was cast for Carusone Cause is same as noted for ballot 35
V0106923	V0106437	3 extra votes for Jennings 3 less undervotes	Ballot 2, Undervote was voted for Jennings Ballot 4, Undervote was voted for Jennings Ballot 6, Undervote was voted for Jennings Causes are same as noted for ballots 2, 4, and 6
V0105124	V0106866	1 extra vote for George 1 less vote for Phillips 1 extra YES vote 1 less undervote	Ballot 67, Vote for Phillips was scripted for George Cause is same as noted for ballot 67 Ballot 5, An undervote was scripted as a Yes Cause is same as noted for ballot 5
V0106978	V0117973	1 extra vote for Jennings 1 less undervote 1 extra undervote 1 less vote for Campbell	Ballot 30, Undervote was voted for Jennings Cause is same as noted for ballot 30 Ballot 34, Vote for Campbell was cast as an undervote Cause is same as noted for ballot 34

2nd Parallel Test -- Friday December 1, 2006

Non-deployed iVotronic Sn #	Script	Variance	Resolution
V0106366	<i>ad hoc test script</i>	1 extra Yes vote	Ballot 44, Recorded Yes vote on pdf when actual vote was No Cause is same as noted for ballot 44
		1 less No vote	
V0105192	V0105192	1 extra vote for Crist	Ballot 19, Vote for Davis was cast for Crist
		1 less vote for Davis	Cause is same as noted for ballot 19
V0106437	V0106437	1 extra vote for Campbell	Ballot 47, Vote for McCollum was cast for Campbell
		1 less vote for McCollum	Cause is same as noted for ballot 47
V0106866	V0106866	None	
V0117973	V0117973	None	

As noted above, both parallel tests were successful in demonstrating 100% accuracy in recording the vote selections as indicated on the review screens. There were no unresolved anomalies. In addition, attempts to replicate the published reports concerning voter difficulties in making or changing their vote selections did not materialize during this test.

Conclusion:

This series of parallel tests demonstrated that the iVotronic touchscreens did not exhibit pervasive malfunctioning. There are no indications of machine bias or otherwise voting machine faults that would yield rejected legal votes. The claims made that votes were lost due to touchscreen malfunction are not supported by the results of this test. In addition, statistical analysis of the undervote for the 13th Congressional District race may not be a good indicator of a voting machine undervote anomaly. Consider the countywide races for Sarasota County Review Board (Districts 1, 2, 3, 4 and 5) and the Hospital Board Southern District Seat race. If one were to give similar considerations that were used to analyze the 13th Congressional District race in an analysis of the countywide races one would note that these six races exhibited nearly identical percent undervotes except for the Review Board District 2 race where the undervote is over 7% higher representing nearly 10,000 additional undervotes. Examination of the ballot images provides some clues as to voting patterns. All six races had two candidates, one Republican listed first and one Democrat, except the Review Board District 2 race which had an NPA candidate instead of a Democrat. BVSC noted when building the test scripts that a large number of voters that tended to vote a Democratic ballot chose to either vote for the Republican candidate or undervote the contest rather than vote for the NPA candidate. The voters that tended to vote a Republican ballot were largely consistent with their Republican choices for county-wide races. Thus, voting patterns with respect to candidate preference does appear to be a factor that needs consideration in any statistical analysis of the 13th Congressional District race.

Furthermore, criticisms that the test arrangement and/or the test team makeup influenced the accuracy of the touchscreens are unfounded. The purpose of this test is to determine whether the iVotronic touchscreens encountered pervasive malfunctioning or irregularities that contributed to the observed undervote count for the 13th Congressional District race. The unit's orientation, the voter's demographics, and all other external factors may contribute to the voter's and/or the touchscreens ability or inability to make vote selections. However, the process of selecting one's choices is not a measure of the voting device's accuracy. Accuracy is relevant to the information presented to the voter on the review screens and ultimately captured as a ballot cast upon a positive action by the voter after that voter has advanced to all the review screens and after making any desired changes to the

vote selections. The sample size for these tests, a total of ten test units, is more than adequate to identify any machine malfunctions, faulty machines, machine bias or irregularities that could have contributed to the observed undervotes for this race. In summary, there is no evidence to support the position that the iVotronic touchscreens caused votes to be lost.

Ballot Format Effects in the
2006 Midterm Elections in Florida

Michael C. Herron

19th December 2006



Ballot Format Effects 19th December 2006 1 / 39

Overview

Motivation

- What explains the undervote rate observed in Sarasota County in Florida's 13th Congressional District?
- Initial work began on this question on November 9, 2006

1295

A-662

Ballot Format Effects

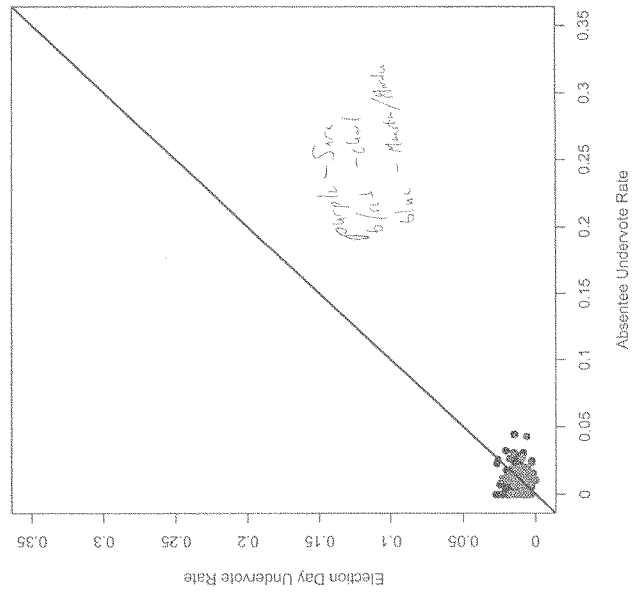
Overview Ballot image data collected and analyzed

County	Ballots	Contests
Charlotte	46024	30
Collier	70115	44
Jackson	2156	20
Lake	75393	58
Lee	129917	65
Miami-Dade	279737	68
Nassau	19637	25
Pasco	113564	41
Sarasota	119898	48
Sumter	27457	26
Total	883898	259

Races Considered

- Florida U.S. Senate: six candidates plus a write-in
- U.S. Congressional when applicable
- Florida Governor: six candidates plus a write-in
- Florida Attorney General (AG): two candidates
- Florida Chief Financial Officer (CFO): two candidates
- Florida Commissioner of Agriculture: two candidates

Undervoting in CD 13 Counties: U.S. Senate Race

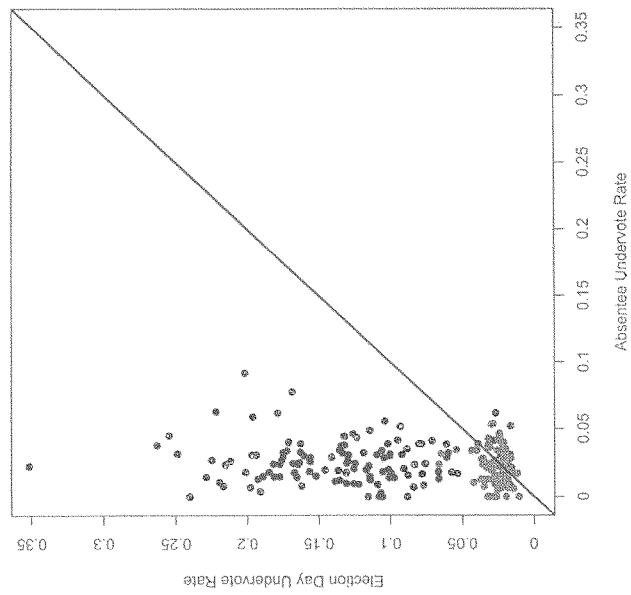


- All precincts similar.
- Election day and absentee undervote rates similar.

Notes:

- CD 13 precincts with at least 100 voters.
- DeSoto County ignored — total of 6672 voters.

Undervoting in CD 13 Counties: CD 13 Race



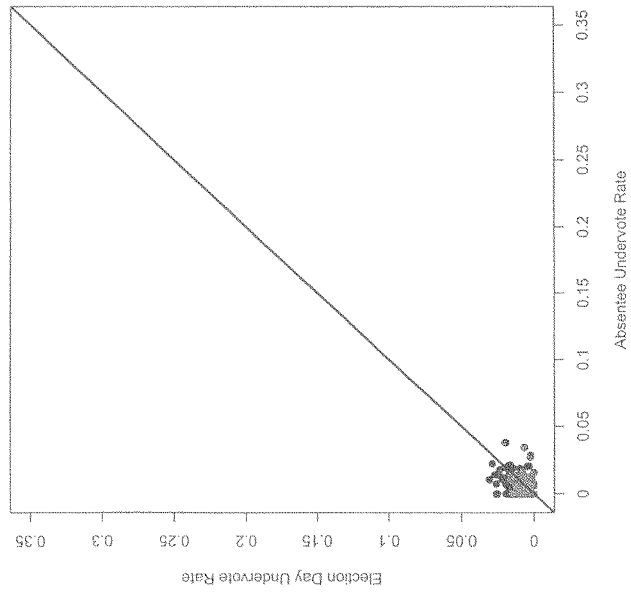
- Counties are distinct.
- Election day undervote high in Sarasota.
- Elevated undervote not isolated.

1300

A-667

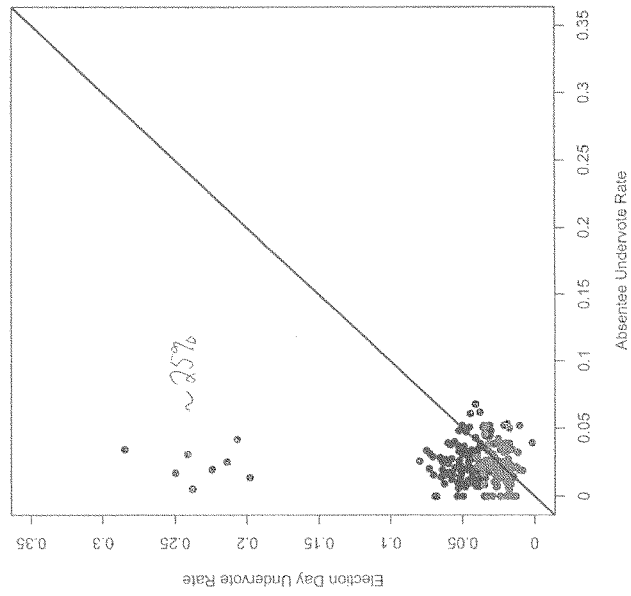
Initial Evidence

Undervoting in CD 13 Counties: Governor Race

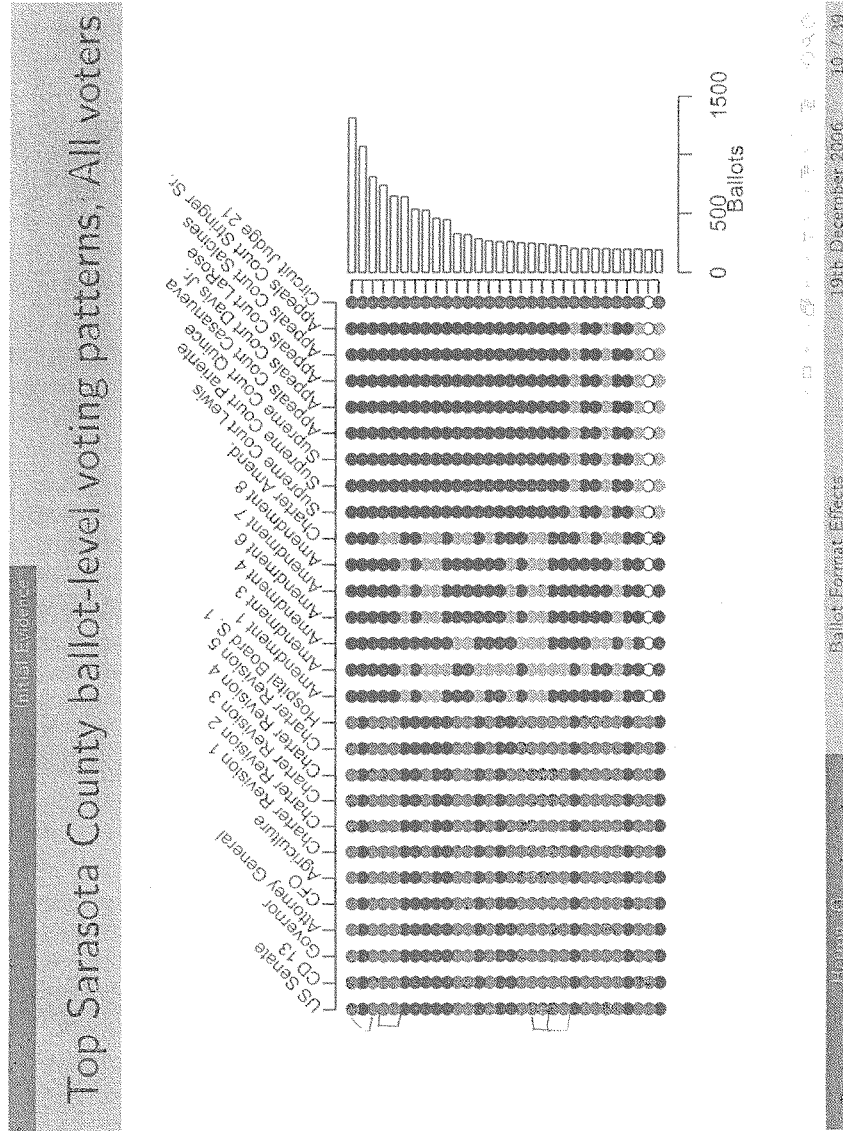


- All precincts similar.
- Election day and absentee undervote rates similar.

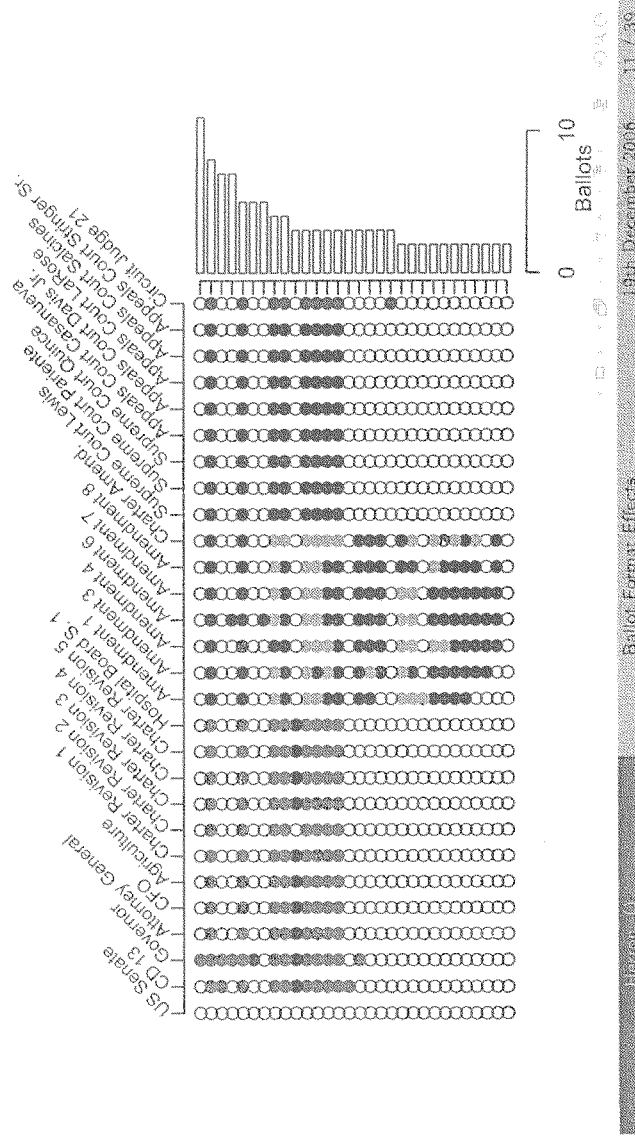
Undervoting in CD 13 Counties: AG Race



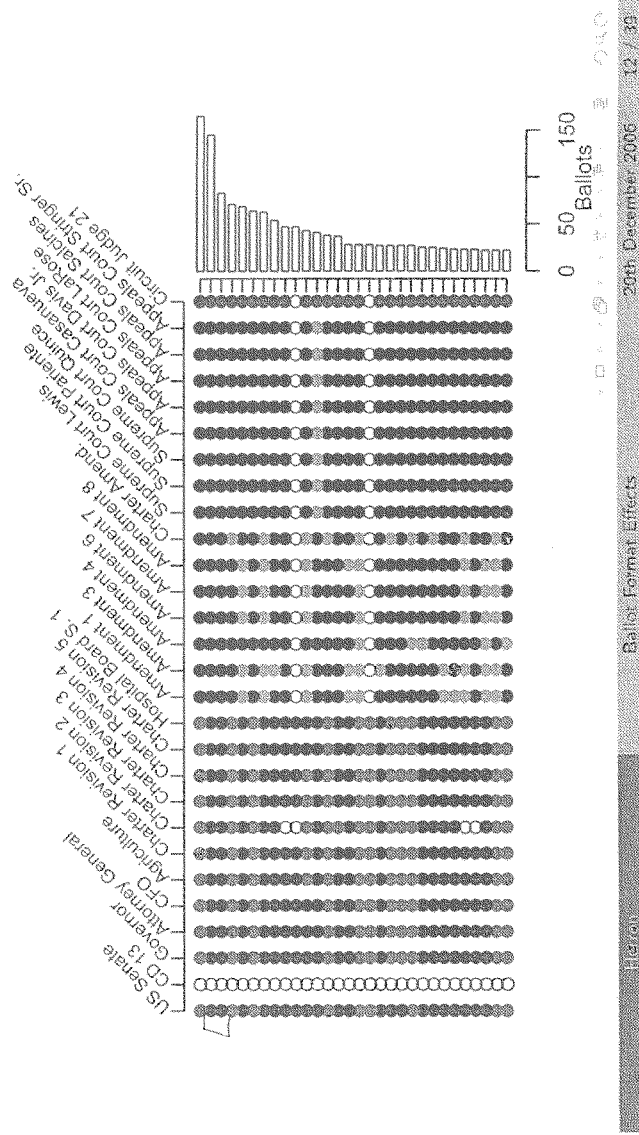
- Counties are distinct.
- Election day undervote high in Charlotte.
- Elevated undervote not isolated.



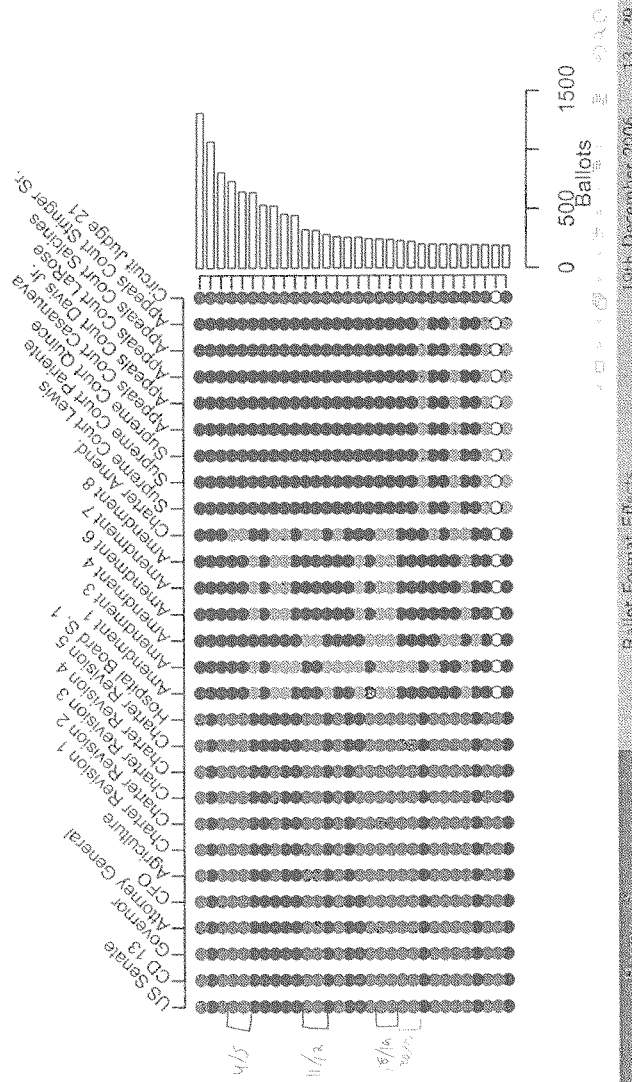
Top Sarasota County ballot-level voting patterns, US Senate undervoters



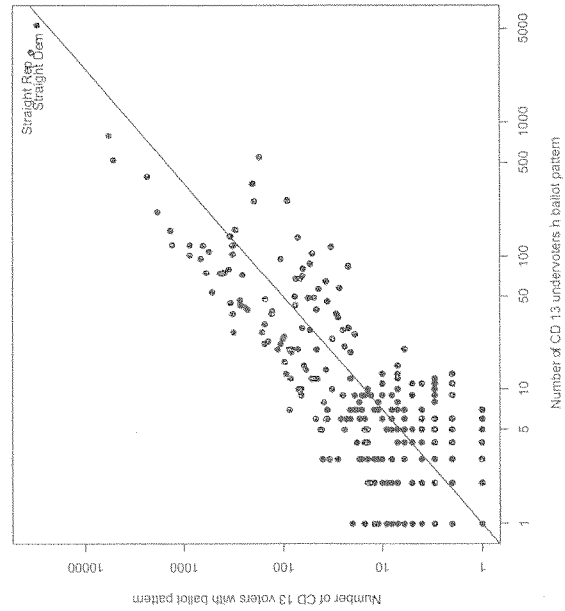
Top Sarasota County ballot-level voting patterns, CD 13 undervoters



Top Sarasota County ballot-level voting patterns, CD 13 voters



Voting patterns among CD 13 voters and undervoters



- Each point represents a pattern of votes across the top five statewide races.
- Points colored from red to blue in proportion to the number of Democrats and Republicans supported.

Initial Evidence

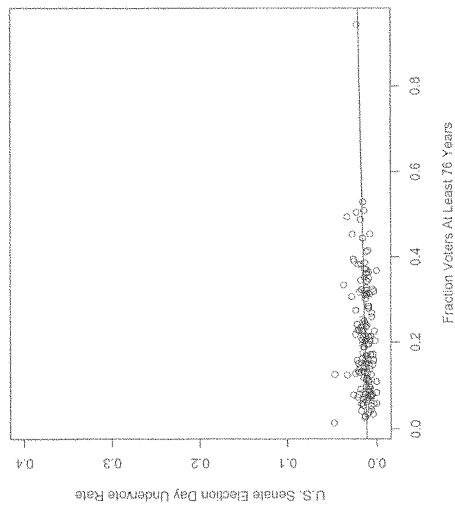
Summary of Initial Evidence

- Sarasota CD 13 race was different than other races in Sarasota
- Sarasota CD 13 race was different than other races in CD 13
- ... except for the AG race in Charlotte County
- Focusing solely on the CD 13 race in Sarasota will lead to an incomplete analysis

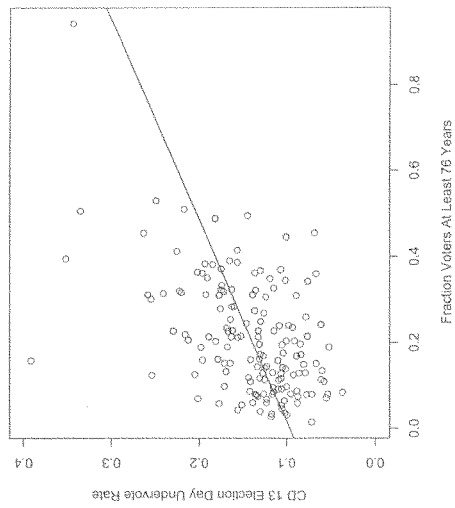
Initial Estimate

Some Evidence of Voter Confusion

US Senate

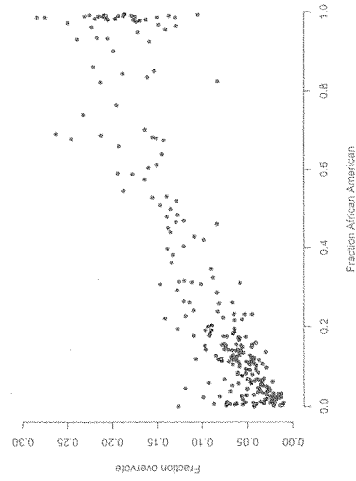


CD 13



Voter confusion in the 2000 Duval County Presidential Election

President



- Punch card machines
- Presidential race spread over 2 ballot pages
- Confusion:
 - 7.6 percent overvote
 - Greater than 20 percent overvote in many precincts
 - 84 percent of overvotes include punch on each of the two ballot pages
 - Overvote rate is a function of demographics

Theory of Ballot Format Effects

- Voters are primed by initial number of races per ballot page
- Confusion tends to occur on the first ballot page that includes multiple races.
- Confusion tends to be aggravated by certain types of voter demographics
- Key point: inconsistency in presentation of races across initial ballot pages
- Theory applies to top races only
- Theory has nothing to say about formats that are not inconsistent

A-678

1311

Sarasota County



CONGRESSIONAL
UNITED STATES SENATOR
(Only for One)

Katherine Harris
Bill Nelson
Floyd Roy Frazer
Billie Walsh
Brian Nouri
Roy Turner
Write-In

REP
DEM
SEN
REP
DEM
DEM

- iVotronic
- Text style
- Layout
- Pg1 Senate
- Pg2 US House/Governor
- Pg3 AG/CFO/Agriculture

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Polling Station 10

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Previous

Heron 0

Ballot Format Effects

19th December 2006

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Sarasota County

U.S. REPRESENTATIVE IN CONGRESS 11TH CONGRESSIONAL DISTRICT (Vote for One)		REP	
Vern Buchanan		REP	<input type="checkbox"/>
Charles J. Jansing		REP	<input type="checkbox"/>

SENATE GOVERNOR AND LIEUTENANT GOVERNOR (Vote for One)		REP	
Charlie Crist		REP	<input type="checkbox"/>
Jeff Raab		REP	<input type="checkbox"/>
Jim Davis		REP	<input type="checkbox"/>
Daryl L. Jones		REP	<input type="checkbox"/>
Don McMillin		REP	<input type="checkbox"/>
Robert Paul Bushnell		REP	<input type="checkbox"/>
Joe Sue Smith		REP	<input type="checkbox"/>
John Wayne Smith		REP	<input type="checkbox"/>
James J. Rooney		REP	<input type="checkbox"/>
Earl C. Babin		REP	<input type="checkbox"/>
Carol O'Leary		REP	<input type="checkbox"/>
Walter D.		REP	<input type="checkbox"/>

- iVotronic
- Text style
- Layout
- Pg1 Senate
- Pg2 US House/Governor
- Pg3 AG/CFO/Agriculture

Sarasota County

ATTORNEY GENERAL (Vote for One)		REP	<input type="checkbox"/>
Bill McCallum			
CHIEF FINANCIAL OFFICER (Vote for One)		REP	<input type="checkbox"/>
Tom Lee			
Alvin Stal		DEM	<input type="checkbox"/>
COMMISSIONER OF AGRICULTURE (Vote for One)		REP	<input type="checkbox"/>
Charles H. Brennan			
Eric Capelard		DEM	<input type="checkbox"/>

- iVotronic
- Text style
- Layout
- Pg1 Senate
- Pg2 US House/Governor
- Pg3 AG/CFO/Agriculture

Ballot Template

Charlotte County

OFFICIAL GENERAL ELECTION BALLOT
CHARLOTTE COUNTY, FL
NOVEMBER 7, 2006

CONGRESSIONAL

UNITED STATES SENATOR
(Vote For One)

Katherine Harris	REP	<input type="checkbox"/>
Bill Nelson	DEM	<input type="checkbox"/>
Floyd Roy Frazier	RPA	<input type="checkbox"/>
Bellinda Nash	NPA	<input type="checkbox"/>
Brian Moore	NPA	<input type="checkbox"/>
Roy Turner	NPA	<input type="checkbox"/>
Write-In		<input type="checkbox"/>

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 - Text style
 - Layout
- Pg1 Senate
Pg2 US House
Pg3 Governor/AG

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Charlotte County

REPRESENTATIVE IN CONGRESS	
DISTRICT 13	
(Vote For One)	
Uem Buchanan	REP <input type="checkbox"/>
Christine Jennings	DEM <input type="checkbox"/>

- iVotronic
- Text style
- Layout
- Pg1 Senate
- Pg2 US House
- Pg3 Governor/AG

Charlotte County

STATE		
GOVERNOR & LIEUTENANT GOVERNOR		
(Vote For One)		
Charlie Crist	REP	<input type="checkbox"/>
Jeff Labrecque	DEM	<input type="checkbox"/>
Jim Davis	REP	<input type="checkbox"/>
Darryl L. Jones	REP	<input type="checkbox"/>
Tom Macklin	REP	<input type="checkbox"/>
Richard Paul Douthett Jr.	REP	<input type="checkbox"/>
Pat Lee Smith	REP	<input type="checkbox"/>
John Wayne Smith	REP	<input type="checkbox"/>
James J. Weathers	REP	<input type="checkbox"/>
Karel C.C. Weber	REP	<input type="checkbox"/>
Carol Castagnaro	REP	<input type="checkbox"/>
Write-In		<input type="checkbox"/>
ATTORNEY GENERAL		
(Vote For One)		
Bill McColium	REP	<input type="checkbox"/>
Walter "Skip" Campbell	DEM	<input type="checkbox"/>
Write-In		<input type="checkbox"/>

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- Pg1 Senate
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- Pg3 Governor/AG

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2 or 3 columns

OFFICIAL GENERAL ELECTION BALLOT PASCO COUNTY, FLORIDA NOVEMBER 7, 2006		REPRESENTATIVE IN CONGRESS DISTRICT 5 (Vote for One)	
LEGISLATURE UNITED STATES SENATOR (Vote for One)		Virginia "Gina" Brown-Walke <input type="checkbox"/> REP <input type="checkbox"/> DEM	
Katherine Harris <input type="checkbox"/> REP <input type="checkbox"/> DEM		John Russell <input type="checkbox"/> REP <input type="checkbox"/> DEM	
Bill Nelson <input type="checkbox"/> NPA <input type="checkbox"/> NPA			
Floyd Ray Frazier <input type="checkbox"/> NPA <input type="checkbox"/> NPA			
Belinda Noah <input type="checkbox"/> NPA <input type="checkbox"/> NPA			
Brian Moore <input type="checkbox"/> NPA <input type="checkbox"/> NPA			
Ray Turner <input type="checkbox"/> NPA <input type="checkbox"/> NPA			
Write-In <input type="checkbox"/>			

- iVotronic
 - Text style (two-column)
 - Layout
- Pg1 Senate/US House
Pg2 Gov/AG/CFO/Agriculture

Pasco County

CLERK CLERK AND LIEUTENANT CLERK (Vote for One)		CHIEF FINANCIAL OFFICER (Vote for One)	
Charlie Crist	REP <input type="checkbox"/>	Tom Lee	REP <input type="checkbox"/>
Jim Davis	DEM <input type="checkbox"/>	Alex Sink	DEM <input type="checkbox"/>
Jeff Kattman			
Beryl L. Jones	REP <input type="checkbox"/>	COMMISSIONER OF AGRICULTURE (Vote for One)	
Tom Macklin	REP <input type="checkbox"/>	Charles H. Bronson	REP <input type="checkbox"/>
Richard Paul Beekinsley	REP <input type="checkbox"/>	Eric Copeland	DEM <input type="checkbox"/>
Dr. Joe Smith	REP <input type="checkbox"/>		
John Wayne Smith	REP <input type="checkbox"/>		
James J. Williams	REP <input type="checkbox"/>		
Karl C. Rowe	REP <input type="checkbox"/>		
Carol Castagnaro	REP <input type="checkbox"/>		
Write-In			
ATTORNEY GENERAL (Vote for One)		STATE SENATOR DISTRICT 12 (Vote for One)	
Bill McCallum	REP <input type="checkbox"/>	Udon Crist	REP <input type="checkbox"/>
Walter "Skip" Campbell	DEM <input type="checkbox"/>	C. Bart Linticum	DEM <input type="checkbox"/>
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- iVotronic
 - Text style (two-column)
 - Layout
- Pg1 Senate/US House
Pg2 Gov/AG/CFO/Agriculture

Nassau County

OFFICIAL GENERAL ELECTION BALLOT		NOVEMBER 7, 2006	
UNITED STATES SENATOR (Vote by Ballot)		Governor and Lieutenant Governor (Vote by Ballot)	
Kathleen Harris REP		Craft Scott REP	
Bal Nelson DEM		Jeff Labovitz REP	
Floyd Ray Frazier NPA		Dave L. Jones DEM	
Scottie Kean NPA		Nat Levin REP	
Brian Moore NPA		Tom Macklin REP	
Roy Turner NPA		Richard Platt Democratic Party	
Write-In		Dr. Joe Smith NPA	
		John Wayne Smith NPA	
		Irene C. O. Spill NPA	
		Chris Campbell NPA	
		Write-In	
REPRESENTATIVE CONGRESS (Vote by Ballot)		Attorney General (Vote by Ballot)	
Acaci Cristofina REP		Bil McCann REP	
Robert J. Harris DEM		Walter Reed Campbell DEM	
Write-In			
		CHIEF FINANCIAL OFFICER (Vote by Ballot)	
		Tom Lane REP	
		Alex Sola DEM	



OFFICIAL GENERAL ELECTION BALLOT NASSAU COUNTY, FLORIDA - NOVEMBER 7, 2006	
COMMISSIONER OF AGRICULTURE <small>(Vote for One)</small>	COUNTY COMMISSIONER DISTRICT 4 <small>(Vote for One)</small>
Charles H. Brandon REP <input type="checkbox"/>	Betty Redway REP <input type="checkbox"/>
Eric Copeland DEM <input type="checkbox"/>	Angie Hall DEM <input type="checkbox"/>
LEGISLATIVE	OCEAN RIDGE DISTRICT AUTHORITY <small>(Vote for One)</small>
STATE SENATOR DISTRICT 1 <small>(Vote for One)</small>	Ed Quayle REP <input type="checkbox"/>
James E. "Jim" King Jr. REP <input type="checkbox"/>	Robert L. Swartz DEM <input type="checkbox"/>
W. Keith <input type="checkbox"/>	
COUNTY	CLERK OF THE SUPERIOR COURT 1 <small>(Vote for One)</small>
TAX COLLECTOR <small>(Vote for One)</small>	Shirley A. Ellis-Lewis of the Superior Court Retired in Office?
John M. Owen REP <input type="checkbox"/>	YES <input type="checkbox"/>
Ray Hurst DEM <input type="checkbox"/>	NO <input type="checkbox"/>
COUNTY CLERK DISTRICT 1 <small>(Vote for One)</small>	CLERK OF THE SUPERIOR COURT 2 <small>(Vote for One)</small>
Mike Boyle REP <input type="checkbox"/>	Shirley A. Ellis-Lewis of the Superior Court Retired in Office?
Phil Scarbro DEM <input type="checkbox"/>	YES <input type="checkbox"/>
	NO <input type="checkbox"/>

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- iVotronic
- Pixel style (two-column)
- Layout
- Pg1 Senate/US House/Gov/AG/CFO
- Pg2 Agriculture/Downballot



Balloons Formats

Miami-Dade (without US House)

OFFICE OF THE CLERK OF THE COUNTY COMMISSION MIAMI-DADE COUNTY, FLORIDA NOVEMBER 7, 2006	
COUNTY COMMISSION	
UNITED STATES SENATOR (Ballot #1)	
Calvin Harris	(REP) 10
Bill Nelson	(DEM) 11
Floyd Roy Harris	(NPA) 12
Gerardo Noya	(NPA) 13
Eric Moore	(NPA) 14
Roy Harris	(NPA) 15
Wright	

- iVotronic
 - Pixel style
 - Layout
- Pg1 Senate
Pg2 Gov/AG/CFO

Ballot Format

Miami-Dade (without US House)

OFFICIAL GENERAL ELECTION BALLOT
MIAMI-DADE COUNTY, FLORIDA
NOVEMBER 7, 2006

COTTONCOCK AND LIEUTENANT GOVERNOR
(Write name)

Charles Crist / Jeff Kestonamp

(REP) 29

Jim Chen / Dany L. Jara

(DEM) 30

Mark Lujan / Tim Nelson

(REP) 31

Richard Paul Dembrosky / Dr. Joe Smith

(WPA) 32

John Wayne Smith / James J. Kearney

(WPA) 33

Neri C.C. Beres / Carol Castiglione

(WPA) 34

Write-in

ATTORNEY GENERAL
(Write name)

Bill McCollum

(REP) 36

Walter "Gus" Campbell

(DEM) 37

CHIEF FINANCIAL OFFICER
(Write name)

Tom Lee

(REP) 39

Alan Stark

(DEM) 40

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Ballot Format Effects

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- iVotronic
- Pixel style
- Layout
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- Pg2 Gov/AG/CFO

Ballot Format

Miami-Dade (with US House)

OFFICIAL GENERAL ELECTION BALLOT
MIAMI-DADE COUNTY, FLORIDA
NOVEMBER 7, 2006

US SENATOR
(Vote for one)

REP/ 10

REP/ 11

DEM/ 12

DEM/ 13

DEM/ 14

DEM/ 15

DEM/ 16

DEM/ 17

US SENATOR
(Vote for one)

REP/ 18

REP/ 19

DEM/ 20

DEM/ 21

DEM/ 22

DEM/ 23

DEM/ 24

DEM/ 25

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Ballot Format Effects

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Ballot Format

Miami-Dade (with US House)

OFFICIAL GENERAL ELECTION BALLOT
MIAMI-DADE COUNTY, FLORIDA
NOVEMBER 7, 2006

DATE

GOVERNOR AND LEAST QUANT GOVERNOR
(Ready for use)

Charles Crist / Jeff Labadie
(REP) 29

Jim Davis / Cary L. Jents
(DEM) 30

Mark Leno / Tom McHugh
(REP) 31

Ronald Paul Dandridge / Dr. Jim Smith
(NPA) 32

John Wayne Smith / James J. Hargrave
(NPA) 33

Mark C. Blier / Carol Castagnaro
(NPA) 34

Write-In

ATTORNEY GENERAL
(Ready for use)

Tim McClellan
(REP) 36

Walter "Skip" Canino
(DEM) 37

CHIEF FINANCIAL OFFICER
(Ready for use)

Tom Lee
(REP) 38

Ann Ditts
(DEM) 40

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Ballot Content: 0

Ballot Format Effects

20th December 2006 24 / 39

Sarasota top-ballot races

Feature	Senate	CD13	Governor	AG	CFO	Agric.
Undervotes	1373	17825	1652	5610	5395	6276
Undervote-Age slope	.01	.21	.02	.05	.02	.04
Avg. total undervotes						
Undervoters	10.8	4.7	9.6	11.9	13.1	13
Voters	2.8	2.4	2.8	2.4	2.4	2.3

- Total votes: 119898
- County-wide contests: 28

Charlotte top-ballot races

Feature	Senate	Governor	AG	CFO	Agriculture
Undervotes	552	368	11377	1691	2614
Undervote-Age slope	.04	.02	.16	.05	.08
Avg. total undervotes					
Undervoters	8.8	10.5	3.8	9.9	8.8
Voters	2.3	2.4	1.7	2.1	2.0

- Total votes: 46024
- County-wide contests: 24

Collier top-ballot races

Feature	Senate	Governor	AG	CFO	Agriculture
Undervotes	996	473	2404	4603	5233
Undervote-Age slope	.02	.01	.01	.08	.11
Avg. total undervotes					
Undervoters	10	11.6	10.6	8.6	8.6
Voters	2.8	2.9	2.6	2.5	2.4

- Total votes: 70115
- County-wide contests: 26
- Undervote CFO and Agriculture: 3902 (85 percent of CFO undervoters)
- Undervote AG and CFO: 1277 (53 percent of AG undervoters)

$$\frac{\rho_1^1 - \delta_{v,h}}{\rho_2^1 - \delta_{v,h}} = \frac{\gamma \cdot G_{v,h}}{4 - AG/CFO/Ag_{v,h}}$$

Format Effects

Lake top-ballot races

Feature	Senate	Governor	AG	CFO	Agriculture
Undervotes	918	771	2833	4019	3686
Undervote-Age slope	.03	.03	.06	.08	.09
Avg. total undervotes					
Undervoters	7.5	7.8	7.4	6.8	7.8
Voters	2	2	1.8	1.8	1.7

- Total votes: 75393

- County-wide contests: 22

ρ_1 S_u / G_{ug}

ρ_2 $G_{u1} / AG-CFO-Agr$

Heiron (0)

Ballot Format Effects

19th December 2006

28 / 39

Format Effects

Lee top-ballot races

Feature	Senate	Governor	AG	CFO	Agriculture
Undervotes	1461	902	26864	4340	7496
Undervote-Age slope	.01	.01	.21	.01	.09
Avg. total undervotes					
Undervoters	12.3	12.8	6.3	14	12
Voters	4.1	4.1	3.4	3.8	3.6

• Total votes: 129917

like Char/6th at top of ballot

• County-wide contests: 28

Miami-Dade top-ballot races with no US House

Feature	Senate	Governor	AG	CFO	Agriculture
Undervotes	400	206	1987	2059	853
Undervote-Age slope	.08	.06	.28	.30	.07
Avg. total undervotes					
Undervoters	9.0	10.6	7.3	7.1	10.5
Voters	2.9	3.0	2.3	2.4	2.6

A-698

1331

• Total votes: 15175

• County-wide contests: 21

• AG-CFO pairs: 1761 (89 percent of AG undervoters)

• AG-Agriculture: 430 (22 percent of AG undervoters)

$\rho_1 \hat{S}_{12}$
 $\rho_2 = \text{Gov/AG/CFO}$
 $\rho_3 = \text{AG/Agr. etc.}$

County Effects

Miami-Dade top-ballot races with US House

Feature	Senate	Governor	AG	CFO	Agriculture
Undervotes	12628	3684	24816	24475	21260
Undervote-Age slope	.35	.08	.50	.41	.52
Avg. total undervotes					
Undervoters	11.6	12.1	10.7	10.6	12.0
Voters	2.9	3.2	2.5	2.5	2.5

$$\beta_1 - \delta_{11}/H_{0111}$$

- Total votes: 264561
- County-wide contests: 21
- AG-CFO pairs: 18007 (73 percent of AG undervoters)
- AG-Agriculture: 12934 (52 percent of AG undervoters)

Nassau top-ballot races

Feature	Senate	Governor	AG	CFO	Agriculture
Undervotes	223	157	478	525	656
Undervote-Age slope	.03	.06	.05	.08	.12
Avg. total undervotes					
Undervoters	10.4	9.9	10.4	10.4	10.3
Voters	1.6	1.7	1.5	1.5	1.4

• Total votes: 19637

• County-wide contests: 24

Pl - Everything

Pasco top-ballot races

Feature	Senate	Governor	AG	CFO	Agriculture
Undervotes	1832	896	5507	4295	6242
Undervote—Age slope	.03	.03	.09	.05	.09
Avg. total undervotes					
Undervoters	11.1	10.9	10.7	13.2	11.8
Voters	2.9	2.9	2.6	2.6	2.4

- Total votes: 113564

- County-wide contests: 28

$$\beta_1 \quad \beta_2 \quad \beta_3 \quad \beta_4 \quad \beta_5$$

Format Effects

Sumter top-ballot races

Feature	Senate	Governor	AG	CFO	Agriculture
Undervotes	341	242	6560	1012	1716
Undervote-Age slope	-.02	-.02	.19	-.01	.02
Avg. total undervotes					
Undervoters	8	7.8	2.6	7.3	6.1
Voters	1.6	1.7	1.1	1.5	1.4

● Total votes: 27457

● County-wide contests: 20

*Sumter Challenging Low
Just proving ones*



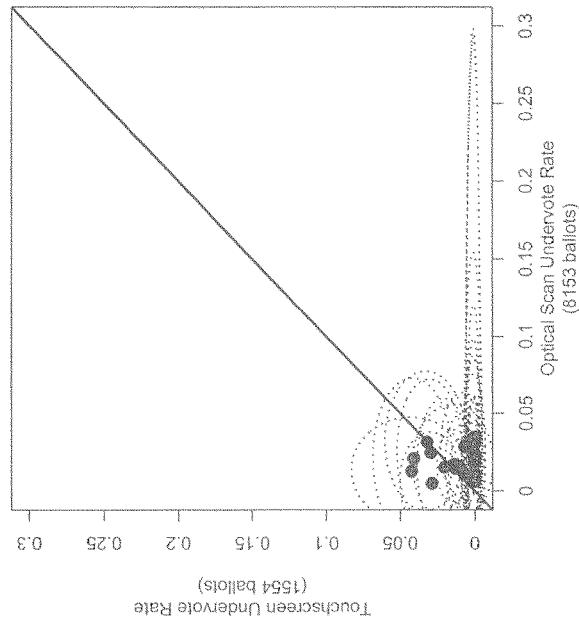
- Uses both iVotronic and optical scan voting on election day
- 25 total precincts, each of which had a single iVotronic
- Election day voters could choose how to vote
- Format issues
 - Bit-mapped style
 - First page contained U.S. Senate race only
 - Second page contained Governor, AG, and CFO
 - Third page contained Agriculture
 - No Congressional District race

A-703



Format Effects

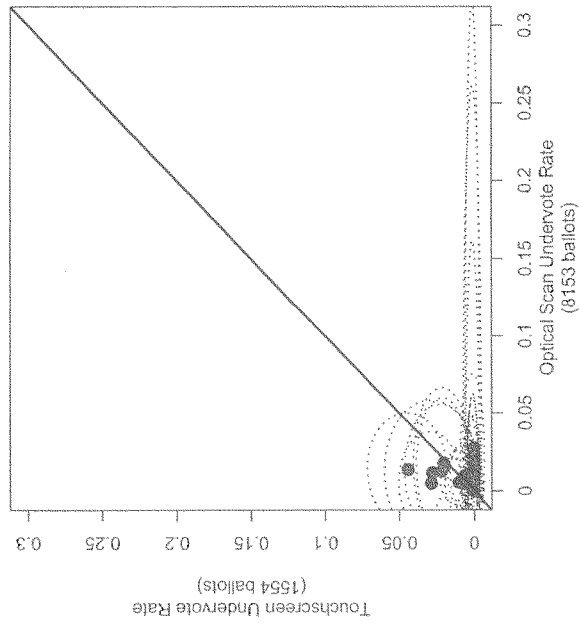
Jackson County: U.S. Senate Race



- All precincts roughly similar.
- Note: this is a small county.

Ballot Effects

Jackson County: Governor Race

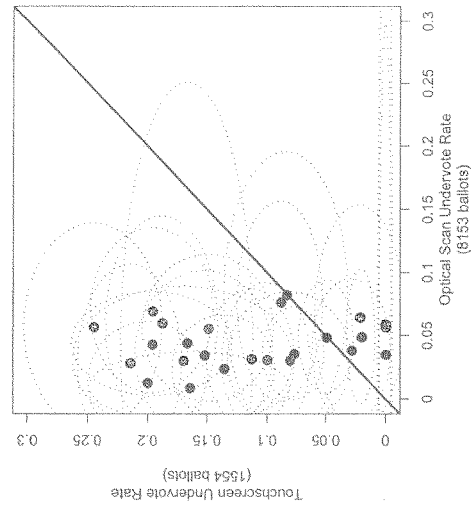
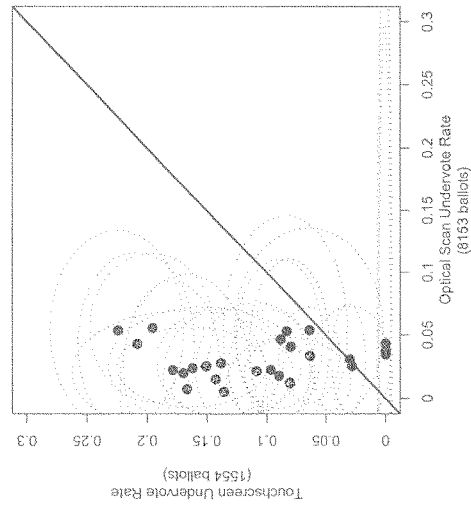


A-705

- All precincts roughly similar.

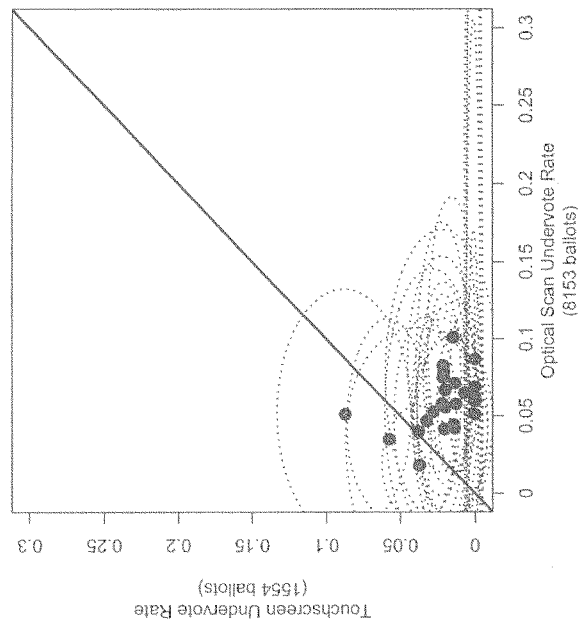
Format Effects

Jackson County: AG and CFO Races



A-706

Jackson County: Agriculture Race



- All precincts roughly similar.

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Tab 30

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative
in Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs.

CASE NO. 2006 CA 002973

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, et al.,

Defendants.

ELLEN FEDDER, et al.,

Plaintiffs,

vs.

CASE NO. 2006 CA 002996
(Consolidated)

TOM GALLAGHER, et al.,

Defendants.

DEFENDANT KATHY DENT'S
POST HEARING BRIEF

Pursuant to the instructions of the Court issued at the
conclusion of the evidentiary hearing on December 20, 2006,
Defendant Kathy Dent, Sarasota County Supervisor of Elections
("Dent") hereby files her post-hearing brief and in support
thereof states:

Pursuant to the Court's order dated December 14, 2006, the sole issue that was to be addressed in the evidentiary hearing which concluded on December 20, 2006, was the "reasonable necessity for the production of ES&S' trade secret materials, including ES&S' source code and proprietary equipment." With regard to the issue of reasonable necessity, Dent takes no position and will abide by any order issued by the Court.

If the Court determines that reasonable necessity exists and grants Plaintiff Christine Jennings' ("Jennings") motion to compel access to the voting equipment owned by Sarasota County, Dent hereby requests that the Court's Order address the following issues:

1. Jennings' Request for Inspection of Tangible Things ("Request for Inspection") requests

temporary access to eight iVotronic machines that generated particularly high undervote rates in the recent congressional election in Sarasota County, including at least one machine used on Election Day in each of six specified precincts (Precincts 31, 44, 74, 105, 117, and 118) and at least one high-undervote machine used in early voting; the carrying cases for those iVotronic machines, power adaptors, and other apparatus to set up the voting booths; two supervisor personalized electronic ballots ("PEBs"); nine regular PEBs (one configured for each ballot style used in Sarasota County in the recent election); a standard ES&S "Communications Pack" (containing a thermal printer and all the necessary cabling); and one PEB reader for transferring data from a PEB to a standard personal computer.

The scope of the "temporary access" being requested by Jennings is impermissibly unclear. Accordingly, Dent requests that any order issued by the Court specify:

- a) what temporary access means or allows Plaintiffs to do;
- b) the duration of the grant of temporary access;
- c) that access to the machines by Jennings only occur under the direct supervision of employees of the Office of the Sarasota County Supervisor of Elections. In the event that the temporary access requested by the Plaintiffs involves a significant amount of staff personnel time, Defendant would request the authorization of the Court to charge those costs to the Plaintiffs, or the Defendants in the event that they undertake the same activities based upon this Court's order;
- d) that Jennings be required to identify with specificity any and all tests procedures that she intends to perform or carry out on the subject equipment;
- e) that Jennings be required to post a bond in the amount of \$50,000.00 to ensure that the eight iVotronic voting machines and related equipment are returned to Sarasota County undamaged and in an uncompromised condition. (Jennings has previously conceptually agreed to posting such a bond.) The Plaintiff should be required to maintain the bond until this Court issues an order finding that the bond may be revoked.

f) In the event that the Plaintiffs' temporary access involves any operation, manipulation or any intrusive actions, then Defendant would request that rather than posting a bond, that the parties be required to pay for each machine, as the machines would be compromised and no longer be appropriately available for use in future elections and a payment for such pieces of equipment, PEBs or other items be charged to the Plaintiffs or other parties involved with the access.

2. In her Request for Inspection, Jennings also requests permission to physically open and inspect the internal components of one iVotronic machine and one PEB.

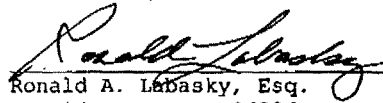
Jennings has agreed to "purchase one iVotronic machine and one PEB so that the equipment can be physically opened and inspected." Jennings Motion to Compel at 4. Dent requests that any order issued by this Court specify:

- a) that Jennings be required to pay \$2,950.00 for one iVotronic voting machine and one PEB;
- b) that Jennings be required to open and inspect the iVotronic voting machine and the PEB under the direct supervision of Dent's Staff; and
- c) that Jennings be required to return all parts and components of the iVotronic voting machine and the PEB to Dent at the conclusion of the litigation.

3. Defendant Dent would suggest and submit that based upon the anticipated questions or disputes that may arise during the course of these "tests" that the Court appoint a special master or other person who would handle the respective questions concerning the test disputes or other matters that may arise between the respective parties. This would avoid the need for the parties to constantly contact the Court to address any disputes that may arise.

In summary, if the Court grants access to the election equipment owned by Sarasota County and under the control of Dent, Dent respectfully requests that the order granting such access specifically address the issues described above.

Respectfully submitted this 21st day of December, 2006.


 Ronald A. Labasky, Esq.
 Florida Bar No. 206326
 YOUNG VAN ASSENDERP, P.A.
 Gallie's Hall
 225 South Adams Street
 Suite 200
 P.O. Box 1833 (32302-1833)
 Tallahassee, Florida 32301
 Phone: 850/222-7206
 Fax: 850/561-6834
 Attorney for Defendant
 Email: rlabasky@yvlaw.net

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by Electronic Transmission or Facsimile and U.S. Mail on this 21st day of December, 2006, to:

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Coffey & Wright, L.L.P.
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PH-2, Grand Bay Plaza
Miami, Florida 33133
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Facsimile: 305/859-9919
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Facsimile: 941/861-7267
Attorney for Sarasota Defendants

Lowell Finley
Voter Action
1604 Solano Avenue
Berkeley, California 94707
Telephone: 510/318-2248
Facsimile: 415/723-7141
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Judith E. Schaeffer
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Foundation
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Facsimile: 202/293-2672
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Voting Rights Project
Randall C. Marshall, Legal Dir.
Aziza Naa-Kaa Botchway
ACLU Foundation of Florida, Inc.
4500 Biscayne Blvd., Suite 340
Miami, Florida 33137-3227
Telephone: 786/273-2729
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Attorney for Fedder Plaintiffs

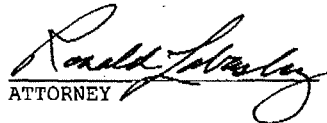
Reginald J. Mitchell
People for the American Way
Foundation
1550 Melvin Street
Tallahassee, Florida 32301
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Facsimile: 850/402-1999
Attorney for Fedder Plaintiffs

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Radey Thomas Yon & Clark, P.A.
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Telephone: 850/425-6654
Facsimile: 850/425-6694
Attorney for ES&S

Rebecca Harrison Steele
Zeina N. Salam
ACLU Foundation of Florida, Inc.
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Tab 31

**IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION**

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in Congress
From the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

Case No: 2006 CA 2973

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, et al.,

Defendants.

and

ELLEN FEDDER, et al.,

Plaintiffs,

v.

Case No: 2006 CA 2996

TOM GALLAGHER, et al.,

Defendants.

**CONGRESSMAN-ELECT VERN BUCHANAN'S
POST HEARING BRIEF CONCERNING REASONABLE NECESSITY**

INTRODUCTION

The instant discovery motions seeking to compel disclosure of trade secrets should be denied because plaintiffs cannot establish reasonable necessity for the following reasons:

- (i) plaintiffs offer no evidentiary support for establishing reasonable necessity; rather, they offer nothing more than the bare assertion that they "need" the source code to "rule out" the existence of a software bug; this construct misdirects the legal issue to be resolved here and is based solely upon a flawed statistical analysis that assumes the existence of the malfunction it purports to evidence;

(ii) objective, authoritative and empirical testing by the State demonstrates that the machines at issue performed with 100% accuracy in recording the vote selections as indicated on the review screens; and

(iii) there exists alternative and less intrusive means for obtaining discovery in aid of plaintiffs' claim that a bug-induced malfunction caused the rejection of a number of legal votes sufficient to change or place in doubt the result of the election.

ARGUMENT

I. Pre-supposition and a Bare Claim of Need Are Insufficient to Establish Reasonable Necessity.

Ms. Jennings' claim of machine malfunction is based upon nothing more than speculation and the circular reasoning of her experts. Professors Stewart and Wallach concede that there is no direct evidence of machine malfunction; rather, their opinions rest upon statistical speculation based upon the existence of "excess undervotes." Professor Stewart's theory rests upon a critical, fundamental flaw in that his definition of "excess undervotes" assumes the existence of some "peculiarity" - *i.e.*, machine malfunction:

Q: And the excess undervote you defined as the amount of undervotes above the normal; correct?

A: Yes, sir.

Q: So your definition presupposes some malfunction or peculiar happening; correct?

A: **It presupposes some peculiarity associated with an election.**

Tab 1, 12/19/06 Tr. 95:14-20 (emphasis added). Professor Stewart confirmed that his analysis provides no evidence of any physical malfunction. Tab 1, 12/19/06 Tr. 82:2-19.¹ Nor can he provide evidence of any of the other hypotheses proffered as a potential cause of the excess undervotes; rather, he merely supplies statistics “about the behavior of voters using particular types of machines.” Tab 1, 12/19/06 Tr. 80:18-81:11.

Professor Stewart’s analysis fails in several other critical respects:

- Although Professor Stewart believes that Ms. Jennings would win if it can be shown that 10 percent of the excess undervotes were caused by machine malfunction, he cannot determine which, if any, of the five proffered hypotheses may have caused the excess undervotes, nor is he able to attribute any statistical probability to the likelihood that any one hypothesis might be responsible for causing the excess undervotes. See Tab 1, 12/19/06 Tr. 105:3-106:6;²

¹ Professor Stewart attempted to maneuver around this by couching the text of his report in terms of the excess undervotes being caused by “the use of electronic voting machines” rather than by “electronic voting machine malfunction” or “software bug.” See Tab 1, 12/19/06 Tr. 75:6-10, 77:23-78:1 (emphasis added).

² The following exchange is telling:

- Q: Can you tell the court what percentage of the excess undervote is attributable to the voter abstention or turnoff hypotheses ...?
- A: **I've done no work that's attempted to identify that number.**
- Q: Are you able to tell the court the number of excess undervotes attributable to the [flawed] ballot design theory ...?
- A: **I've done no research to try to parse out the different contributing factors to the excess undervote.**
- Q: . . . [C]an you tell the court what percentage of excess undervotes is attributable to the malicious code hypothesis ...?
- A: **I have no data about that.**
- Q: And can you tell the court ... what percentage of the excess undervotes is attributable to this software bug that Dr. Wallach references in his report?
- A: **I have no evidence about that.**
- Q: Is there any way that you can tell the court what percentages are attributable to any of these hypotheses?

- His analysis cannot determine the intent of any voter, but, rather, “is an attempt to estimate ... how that pool of voters **would have** cast their ballots in this particular case.” Tab 1, 12/19/06 Tr. 103:23-104:6 (emphasis added);
- He cannot prove the actual number of excess undervotes in the Congressional District 13 race, *see* Tab 1, 12/19/06 Tr. 100:4-7.

The mere assumption of malfunction is not evidence of malfunction and cannot serve as the evidentiary basis for reasonable necessity.

A party seeking to pierce the statutory privilege and compel production of trade secrets must establish reasonable necessity. *See, e.g., Rare Coin-It, Inc. v. I.J.E., Inc.*, 625 So.2d 1277, (Fla. 3d DCA 1993) (quashing discovery order where there was no evidence presented of reasonable necessity of disclosure of trade secrets); *Scientific Games, Inc. v. Dittler Brothers, Inc.*, 586 So.2d 1128, 1131-32 (Fla. 1st DCA 1991) (quashing discovery order where requesting party failed to establish reasonable necessity); *Goodyear Tire & Rubber Co. v. Cooley*, 359 So.2d 1200, (Fla. 1st DCA 1978) (quashing discovery order that required access to trade secrets because the “evidence [does not] reveal the necessity for such access and inspection”). Otherwise, anyone filing any action that remotely concerns a trade secret could automatically gain access on the grounds of “reasonable necessity.”

The mere assertion of need, absent an evidentiary showing, is insufficient to override the statutory privilege against disclosure of trade secrets. *Beck v. Dumas*, 709 So.2d 601, 603 (Fla. 5th DCA 1998) (rejecting argument of counsel that he “needed” the trade secret materials and quashing order compelling production). The only proffered basis for gaining access to the trade secrets here is Professor Wallach’s bare assertion that he can’t rule out the existence of a bug

A: **I know of, off the top of my head, no way in which you could test those**, but I am not -- I am not an expert in how those bugs would manifest themselves in the voting record.

Tab 1, 12/19/06 Tr. 105:3-106:6 (emphasis added).

without the source code. *See, e.g.*, Tab 2, 12/20/06 Tr. 13:7-10.³ The claim that he “can’t rule out the existence of a bug without the source code” is a red herring that assumes malfunction and requires proof of a negative. In Professor Wallach’s universe, the inability to prove the absence of a bug means, *a fortiori*, that there is a malfunction -- regardless of whether the machines actually manifest the alleged malfunction in the real world. The assertion that a software bug’s existence can never be ruled out is far different than proving than a machine malfunctioned.

Contrary to Professor Wallach’s construct, plaintiffs’ do not bear the burden of proving or disproving the existence of a software bug; rather, they bear the burden of proving that machine malfunction caused the rejection of a number of legal votes for Ms. Jennings sufficient to change or place in doubt the result of the election.⁴ This legally dispositive issue can be fully litigated and properly resolved without resort to disclosure of the trade secret source code. *See e.g., Scientific Games, Inc. v. Dittler Brothers, Inc.*, 586 So.2d 1128, 1131-32 (Fla. 1st DCA 1991) (quashing discovery order where the parties may litigate and resolve the dispositive issue without resort to the disclosure of trade secrets); *see also Rare Coin-It, Inc. v. I.J.E., Inc.*, 625 So.2d 1277, (Fla. 3d DCA 1993) (quashing discovery order where there was no evidence presented of reasonable necessity of disclosure of trade secrets in order to prove “the ultimate issue in this case”).

³ Professor Wallach’s belief that there “might be a problem” is based upon “excess undervotes” described in Professor Stewart’s report and testimony. *See* Tab 2, 12/20/2-3.

⁴ On this point the record evidence is clear and uncontroverted: neither statistical expert can determine the number of votes cast for Ms. Jennings that were not counted, if any. *See* Tab 1, 12/19/06 Tr. 100:4-7 (“Q: You can’t prove the actual number of excess votes in this case, can you? A [Professor Stewart]: **I cannot prove that is was a particular number**, no sir.”) (emphasis added); Tab 3, 12/20/06 Tr. 204:12-21 (“Q: Can your analysis, as you’ve described it today, tell us the number of votes that were cast for Christine Jennings that were not counted, if any, in the 13th congressional district race? . . . A [Professor Herron]: I think it follows from my report that **that number is zero.**”) (emphasis added).

Professor Wallach's claimed need for access to the source code is betrayed by his own testimony. Wallach acknowledges that he is able to "demonstrate software bugs in the operation of systems...." Tab 2, 12/20/06 Tr. 42:17-19. He further admits that parallel "testing can **demonstrate beyond a doubt** that a problem exists." Tab 2, 12/20/06 Tr. 31:22-23 (emphasis added); *see also id.*, 11:20-22 ("a broad truism is that [parallel] testing can never identify the absence of bugs; **it can only show the presence of bugs.**") (emphasis added). In fact, he has never "seen a bug cause a voting machine to create undervotes for a specific candidate during an election but did not show up at all in parallel testing." Tab 2, 12/20/06 Tr. 71: 6-10. Professor Wallach goes on to describe his analytical process as determining the presence of a bug through parallel testing with resort to review of the source code to explain *why* there was a malfunction. Tab 2, 12/20/06 Tr. 149:24-150:2 ("through testing and examination of machines, I might observe something unusual, and then I might go back and look at the software to see if I can find an explanation for why.").⁵ Even if a bug were found in the source code, Professor Wallach must demonstrate its manifestation in the machine's operation in order to validate his theory; absent such empirical demonstration, any claim that machine malfunction caused the rejection of a number of legal votes sufficient to change or place in doubt the result of the election remains a theoretical notion and, necessarily, fails the crucial element of causation.⁶ In fact, objective,

⁵ The relevant question is in not *why* the bug caused the malfunction but *whether* the bug caused the malfunction. To have any probative value in this contest plaintiffs would have to demonstrate the manifestation of a bug that caused a failure to count votes cast for Christine Jennings at a rate sufficient to change or place in doubt the result of the election.

⁶ *See, e.g., Gore v. Harris*, 772 So.2d 1243, 1253 (Fla.) ("Logic dictates that to bring a challenge based upon the rejection of a specific number of legal votes under section 102.168(3)(c), the contestant **must establish the 'number of legal votes** which the county canvassing board failed to count.'"), *rev'd on other grounds*, 531 U.S. 98 (2000).

authoritative and empirical testing by the State has demonstrated that the touchscreen machines record voters' selections as reflected on the summary screens with 100% accuracy.

**II. The State's Parallel Testing Demonstrates the
Absence of Reasonable Necessity.**

The Secretary of State, as Florida's chief election officer and pursuant to Section 101.5607(1)(c), directed the Division of Elections staff to conduct an audit of Sarasota County's voting system and attendant procedures with regard to the United States Congressional District 13 race. The audit was conducted by the Bureau of Voting Systems Certification, which was created by the Legislature to "provide technical support to the supervisors of elections and which is responsible for voting system standards and certification." § 101.017, Fla. Stat. (2006). This audit consists of a "Parallel Test" of the voting machines used by Sarasota County in the general election and a separate source code review.⁷ The Parallel Test has been completed and the State has issued its report, which was received into evidence as ES&S's Exhibit 7 ("State Parallel Test Report," a true and correct copy of which is attached at Tab 4). The Parallel Test "focused on the iVotronic touchscreen's **ability to accurately record a voter's selections as presented to the voter on the touchscreen's ballot review pages.**" Tab 4, State Parallel Test Report, p. 2 (emphasis added).⁸ The testing "also examined various complaints regarding a voter's ability or difficulty in making his or her vote selections." *Id.* As noted by the State, "[t]he intent of this

⁷ Counsel understands that the State has retained or is retaining a team of independent experts to conduct the source code review phase of the audit.

⁸ Such a focus is not only appropriate, but necessary, for two reasons: (i) "[i]t is the review screens' list of voter selections that the iVotronic records when the voter presses the 'VOTE' button to cast the ballot[.]" Tab 4, State Parallel Test Report, p. 7; and (ii) plaintiffs' claims "that the voting equipment may not have correctly captures the voters' selection." *Id.*, p. 3; *see also* Jennings Amended Complaint, ¶ 2 (claiming the machines "were systematically failing to record votes cast for the candidates in the Thirteenth District congressional race -- particularly votes cast for Plaintiff Christine Jennings.").

parallel activity is to **ascertain the accuracy and reliability of the deployed voting devices** with consideration given to ballot style, layout, coding, demographics, and operation.” *Id.*, p. 3. The Parallel Test was based upon actual voting behavior and data. *See Id.*, pp. 3-9 (detailing parameters, procedures, and scripting, etc.). The tests were performed on machines with the highest undervote totals from the precincts that experienced the highest levels of undervotes and selected by the parties. *Id.* p. 3. The State defined the pool for machine selection as those with highest undervote totals in order to “enhance the probability of revealing the undervote anomaly should it exist.” *Id.*

The State’s tests “were successful in demonstrating 100% accuracy in recording the vote selections as indicated on the review screens. There were no unresolved anomalies. In addition, attempts to replicate the published reports concerning voter difficulties in making or changing their vote selections did not materialize during this test.” Tab 4, State Parallel Test Report, p. 8. The State’s analysis concludes:

This series of parallel tests demonstrated that the iVotronic touchscreens did not exhibit pervasive malfunctioning. There are no indications of machine bias or otherwise voting machine faults that would yield rejected legal votes. The claims made that vote were lost due to touchscreen malfunction are not supported by the results of this test. . . .

In summary, **there is no evidence to support the position that the iVotronic touchscreens caused votes to be lost.**

Tab 4, Parallel Test Report, pp. 8-9 (emphasis added).

Plaintiffs offered no evidence to rebut the State’s conclusion “that the iVotronic touchscreens accurately captures the voter’s selection as presented to the voter on the review screens.” *See* Tab. 4, Parallel Test Summary Report (ES&S Ex. 7), p. 2. To the contrary, Professor Wallach admits: “**I don’t doubt its accuracy.**” Tab 2, 12/20/06 Tr. 68:24-69:7 (emphasis added). Instead, he quibbles with its “completeness.” *Id.* On redirect, Professor

Wallach agreed to a laundry list of items presented by counsel which, if included, would have made the parallel testing “more complete.” *See* Tab 2, 12/20/06 Tr. 72:4-75:20 (noting factors such as demographic selection of test voters, the number of machines tested and the rapidity or steadiness of finger touches). None of these address the ultimate question of whether the iVotronic machines accurately recorded the voter’s selection as presented to -- and verified by -- the voter on the review screens.⁹ In the end, Professor Wallach concluded that the State’s decision to display the touchscreens vertically rather than horizontally “raises the need to perform new tests that would be done closer to how the machines were used on election day.” Tab 2, 12/20/06 Tr. 74:8-18.¹⁰

III. A Reasonable, Less Intrusive Alternatives Are Available.

Courts cannot compel the disclosure of trade secrets absent evidence of reasonable necessity, *see* cases cited above. Indeed, the production of confidential information will not be compelled where there is a less intrusive means of obtaining discovery. *See, e.g., Delta Health Group, Inc. v. Williams*, 780 So.2d 337 (Fla. 5th DCA 2001) (balancing need for confidential information against right of privacy).

⁹ *See, e.g.,* Tab 4, Parallel Test Report, pp. 8-9:

... [T]he process of selecting one’s choices is not a measure of the of the voting device’s accuracy. **Accuracy is relevant to the information presented to the voter on the review screens and ultimately captured as a ballot cast upon a positive action by the voter after that voter has advanced to al the review screens and after making any desired changes to the vote selections.** The sample size for these tests, a total of ten test units, is more than adequate to identify any machine malfunctions, faulty machines, machine bias or irregularities that could have contributed to the observed undervotes in this race. [emphasis added]

¹⁰ The State used the vertical display to allow “the public to witness the test team’s interaction with the touchscreens” and to facilitate videotaping as well as the observation by representatives of Ms. Jennings and Congressman-elect Buchanan. Tab 3, State Parallel Test Report, p. 6.

Congressman-elect Buchanan submits that the State, pursuant to its statutory powers, is the most appropriate auditor of the source code; and thus, like the parallel testing, the State should be allowed to conclude its work in that regard. Maintaining the trade secret privilege is particularly appropriate here because the only direct, record evidence concerning the performance of the voting machines demonstrates that they performed with 100% accuracy in recording the vote selections as indicated on the review screens.

If, however, the Court agrees with plaintiffs' claim that the State's parallel testing is "incomplete," then it is not unreasonable to give them the opportunity to implement their own (already existing) parallel testing program -- assuming certain basic control procedures are in place, *e.g.*, they provide voting scripts to all the parties in advance, allow the parties to monitor the testing, videotape the testing for subsequent review and the like. In this way, ES&S's acknowledged proprietary rights and statutory protections are left in tact while plaintiffs are afforded a less intrusive means of taking discovery in aid of their claim of machine malfunction. If plaintiffs could demonstrate through parallel testing machine malfunction to a degree approximating the undervote experienced in the general election, then it may not be necessary to review the source code at all. Alternatively, if parallel testing revealed malfunction to a lesser degree, such a showing might demonstrate evidence in support of a finding of reasonable necessity to obtain the source code.

CONCLUSION

For all of the foregoing reasons, Christine Jennings' motion should be denied in its entirety. In the alternative, it is respectfully suggested that Ms. Jennings be allowed to first engage in parallel testing of her choosing (subject only to advance notice of the procedures, access to the exercises for monitoring and videotaping) in order to adduce evidence of machine malfunction in support of a claim of reasonable necessity for access to ES&S's proprietary trade secret source code.

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing *Post-Hearing Brief Concerning Reasonable Necessity* has been furnished by U.S. Mail and e-mail this 22nd day of December, 2006 to counsel of record on the attached service list.


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Tab 32

IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

CASE NO. 2006-CA-2973
Consolidated with Case No. 2006-CA-2996

vs.

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher and State Senator Daniel Webster,
et al.,

Defendants.

**DEFENDANT ELECTION SYSTEMS & SOFTWARE, INC.'s
POST-HEARING CLOSING ARGUMENT AND MEMORANDUM OF LAW**

Defendant Election Systems & Software, Inc. ("ES&S"), pursuant to this Court's instruction, files its Post-Hearing Closing Argument and Memorandum of Law in Opposition to Plaintiffs' Motions to Compel Production and for Entry of a Protective Order which seek the production of the stipulated trade secrets of ES&S which are specifically identified in ES&S' Pre-Hearing Memorandum of Law, filed December 18, 2006, and collectively referred to herein as the "Source Code and Proprietary Technology."

I. INTRODUCTION

The arguments made at the hearing conducted by this Honorable Court on December 19 and 20, 2006, clearly demonstrate that Plaintiffs continue to misunderstand and/or misrepresent the evidentiary standards applicable to this issue, and the legal standards by which "reasonable necessity" must be established. ES&S utilized the hearing time given by this Court to introduce

evidence which demonstrated that its election systems utilized in Sarasota County performed their function with 100% accuracy. ES&S also introduced compelling evidence, using the methodology suggested by Plaintiffs' own experts, as to the likely cause of the undervote observed in the 13th Congressional District race in Sarasota County. In contrast, Plaintiffs presented no evidence whatsoever to indicate that a malfunction of ES&S' machines occurred during the election. In effect, their proof consisted of continuously pointing to the number of undervotes observed in Sarasota County as their "evidence" of machine malfunction. Plaintiffs do not seem to understand that in the context of this hearing, the percentage of undervotes was the "effect," and the purpose of the hearing was to provide sufficient evidence regarding the "cause" in order to establish by the preponderance of the evidence that a reasonable necessity existed to justify disclosure of trade secrets.

Plaintiffs have argued that defendant ES&S seeks to put "the proverbial cart before the horse" by providing clear and compelling evidence which demonstrates that the machines did not malfunction. In this regard, clear and compelling evidence that the iVotronic machines functioned correctly during the election is extremely relevant and necessary for the Court's consideration of the issues presented. Indeed, convincing and un rebutted evidence that the machines performed their function with 100% accuracy is, in and of itself, proof that there is no reasonable necessity to defeat ES&S' statutorily protected right to maintain confidentiality of trade secret information.

It is not surprising to see that Plaintiffs have made every effort to suppress introduction and discussion of the evidence which shows that the machines functioned exactly as designed. Indeed, Plaintiffs' efforts in the initial lawsuit filed in Sarasota to enjoin the State from proceeding with its parallel tests, as well as their efforts to obtain ES&S' machines and

proprietary software prior to the state conducting its tests is very telling. It is obvious that the Plaintiffs did not want introduction of evidence showing that the machines worked appropriately **because they well know** that this evidence demonstrates that there is no reasonable necessity to grant their requested discovery. Therefore it is also not surprising that Plaintiffs lodged vehement objections to the introduction of the Certified Report of the parallel tests results.

ES&S is grateful for the opportunity provided by this Court to have presented evidence and hereby sets forth its closing arguments.

II. LEGAL STANDARDS AND QUANTUM OF PROOF NECESSARY TO FIND REASONABLE NECESSITY FOR THE PRODUCTION OF TRADE SECRETS IN AN ELECTION CONTEST.

A. The Burden of Proof and the Effect Thereon of the Stipulation of Trade Secret Status of the Source Code and Proprietary Technology.

When a trade secret privilege is asserted the normal procedure followed is for the trial court to hold a hearing or *in camera* inspection to determine if the material claimed to be a trade secret, is in fact a trade secret. *American Travel Related Services, Inc. v. Cruz*, 761 So. 2d 1206 (Fla. 4th DCA 2000). To prove that material is a trade secret, the owner of the trade secret must present evidence to establish the statutory elements that define when something is a trade secret. In Florida, there are two virtually identical statutory definitions of what constitutes a trade secret under Florida law. As defined in the Uniform Trade Secrets Act, adopted in Florida Statutes §§ 688.001 through 688.009, a trade secret “means information, including a formula, pattern, compilation, program, device, method, technique or process that: (a) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use; and (b) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.” § 688.002(4), Fla. Stat. (2006). A very similar definition is found in

Chapter 812 of the Florida Statutes, which makes it a felony to steal trade secrets. Section 812.081(1)(c), Florida Statutes, provides in pertinent part that material that is a trade secret is considered to be secret and of value to its owner. Accordingly, a party asserting a trade secret privilege would normally have to submit evidence that the material claimed to be trade secret was of value such that its disclosure would cause economic harm and that reasonable steps had been taken to preserve its secrecy.

In Plaintiff Jennings' Motion For Entry of a Protective Order, she concedes, for purposes of the motion, that ES&S' Source Code and Proprietary Technology constitutes a trade secret. Based on that concession, counsel for ES&S advised this Court on December 8, 2006, that ES&S' estimate of one day of hearing time was premised on all parties stipulating that the Source Code and Proprietary Technology are trade secrets. (Transcript of Dec. 8, 2006 Hearing, p. 7 attached as Exhibit A) Clearly, if it had been necessary for ES&S to prove the value of the Source Code and Proprietary Technology, the economic harm that would occur due to disclosure and the reasonableness of steps taken to preserve its secrecy, then a much longer evidentiary hearing would be required. However, this Court resolved that issue at the December 8, 2006, hearing when all parties stipulated to the trade secret status of the Source Code and Proprietary Technology. The Court, stated: "There is no issue on whether or not we have a trade secret here. Everybody sit up and say that's a trade secret, so for the - - it's a trade secret." (Transcript of Dec. 8, 2006 Hearing, p. 47 attached as Exhibit A) At the December 8, 2006, hearing, in the order entered following the hearing and at the commencement of the evidentiary hearing, this Court made it absolutely clear that the only issue on which evidence would be taken would be evidence on the whether the Plaintiffs could demonstrate "reasonable necessity" for production

of ES&S' trade secrets. (Transcript, Vol. 1 at 6)¹ Based on the stipulation and that understanding as to the scope of the hearing, ES&S selected its witness and evidence and came to the hearing prepared to present evidence addressing the issue of reasonable necessity. ES&S did not select witnesses or assemble evidence to establish the value of its Source Code and Proprietary Technology or the economic harm that would be caused by disclosure of the Source Code and Proprietary Technology because such facts are established through the stipulation that the Source Code and Proprietary Technology are, in fact, trade secrets under the Florida Statutes that define trade secrets. Once material has been determined to be a trade secret, disclosure is presumed to cause economic harm to the owner of the trade secret, otherwise it could not be a trade secret under Florida law.

Based on post-hearing comments by counsel present at the evidentiary hearing, ES&S believes that Plaintiffs may now attempt to argue that ES&S failed to meet its evidentiary burden by not submitting evidence of the value of the Source Code and Proprietary Technology or the economic harm that ES&S would suffer due to its disclosure. Based on the stipulation of the parties that the Source Code and Proprietary Technology are in fact trade secrets and the parameters of the hearing established by this Court, ES&S submits that if such an argument is made that it is tantamount to bad faith on the part of Plaintiffs and an attempt by Plaintiffs to mislead ES&S and this Court by stipulating to the trade secret status of the Source Code and Proprietary Technology. There can be no question here that the only issue to be addressed at the hearing was the Plaintiffs' reasonable necessity for production of ES&S' trade secrets. This Court's limitation on the issue to be addressed at the hearing is consistent with what Florida case law requires when the parties stipulate to the trade secret status of the material sought to be

¹ Citations to the two volume transcript of the Evidentiary Hearing are shown herein as "(Transcript, Vol. __ at __)"

produced. *Beck v. Dumas*, 709 So. 2d 601,603 (Fla. 4th DCA 1998); *Rare Coin-It, Inv. v. I.J.E., Inc.*, 625 So. 2d 1277 (Fla. 3d DCA 1993). As will be shown herein, the burden of proof is on Plaintiffs to establish reasonable necessity for disclosure of the trade secret and they can only do so by presenting evidence showing that “disclosure is indispensable to the ascertainment of the truth.” *Goodyear Tire & Rubber Co. v. Cooley*, 359 So. 2d 1200, 1202 (Fla. 1st DCA 1978).

B. To Compel ES&S To Disclose Its Trade Secrets, Plaintiffs Must Show By A Preponderance Of The Evidence That These Trade Secrets Are Indispensable, Not Merely Relevant, To Their Case.

Plaintiffs named ES&S as a defendant in this case for only one reason, namely, to obtain ES&S’ trade secrets, i.e., ES&S’ Source Code and Proprietary Technology. ES&S has no interest in this case, other than to protect these trade secrets. Plaintiffs acknowledge that ES&S’ Source Code and Proprietary Technology are trade secrets, and therefore bear the burden to establish an exception to the trade secret privilege that would allow them to obtain this material notwithstanding the privilege.

Although Plaintiffs concede that it is their burden, Plaintiffs wrongly state that the burden is a low one requiring a mere showing that it is “possible” that the iVotronics voting machine malfunctioned and that this material is relevant to confirming this theoretical possibility. Plaintiffs must show more than mere relevance; indeed, if that were all plaintiffs were required to show, then the privilege would become meaningless, since the burden for obtaining this privileged material would not be any greater than if it were not privileged.

In fact, courts have established a high threshold for obtaining trade secrets, requiring the party seeking production to show that the trade secrets are reasonably necessary to their case. *Beck v. Dumas*, 709 So. 2d 601, 603 (Fla. 4th DCA 1998 (“the court must require the party seeking production to show reasonable necessity for the required materials”). In other words,

Plaintiffs must show that the trade secrets in question are indispensable, meaning that there is no reasonable (as opposed to ideal) substitute that Plaintiffs can turn to if the trade secrets are not disclosed. *See Goodyear Tire & Rubber Co. v. Cooley*, 359 So. 2d 1200, 1202 (Fla. 1st DCA 1978):

[T]he general rule is stated as follows: “. . . Disclosure of trade secrets is not required on discovery except in such cases and to such extent that the disclosure is indispensable to the ascertainment of the truth.” [Emphasis added]

Cf. The American Heritage Dictionary 834 (2nd College Edition 1985) (defining the term “necessary” to mean “[a]bsolutely essential; indispensable”).

Notably, the reasonable necessity standard is applied even more stringently where the trade secret is being sought from a witness rather than a party. In *Inrecon v. Village Homes at Country Walk*, 644 So. 2d 103, 105 (Fla. 3d DCA 1994), the Third District wrote:

“The rule that allows a party to request production of its opponent’s records ‘is in no sense designed to afford a litigant an avenue to pry into his adversary’s business or go on a fishing expedition to uncover business methods, confidential relations, or other facts pertaining to the business.’” [Citations omitted] The foregoing observation applies with greater force where, as here, the discovery sought is from a witness, not a party. [Emphasis added]

Here, although ES&S has been named as a defendant, it is not a proper party. Section 102.168, Florida Statutes, lists the proper and indispensable parties to an election contest, and ES&S is excluded from that list. *Jackson County Hospital Corp. v. Aldrich*, 835 So. 2d 318, 329 (Fla. 1st DCA 2003) (“[i]t is a well-settled principle that when ‘a statute specifically enumerates those persons to be covered, ordinarily the statute will be construed as excluding from its operation all those other persons not expressly mentioned’”). Indeed, because ES&S is a private entity with no lawful authority to provide Jennings the remedy she seeks in this lawsuit, there is no reason to make ES&S a defendant, other than for the improper purpose of making it easier to obtain

ES&S' trade secrets. As a result, for purposes of this analysis, ES&S should be treated not as an adverse party, but as a witness who is entitled to added protection from the Court with respect to its trade secrets.

Plaintiffs also assert that the burden of proving reasonable necessity is minimal because this is merely a preliminary discovery issue rather than an issue that must be proved at trial. Although the existence of a privilege, or an exception to a privilege, is a preliminary question, the Court must still resolve the question based on the preponderance of evidence standard. That is, Plaintiffs must prove the predicate findings which demonstrate the necessity of the trade secret materials by a preponderance of the evidence. *Cf. Eight Hundred, Inc. v. Florida Department of Revenue*, 837 So. 2d 574, 576 (Fla. 1st DCA 2003) (“the party seeking to abrogate the [attorney client] privilege has the burden to prove facts which would make an exception to the privilege applicable’ by ‘a preponderance of the evidence’”).

Finally, Plaintiffs’ burden to prove a reasonable necessity cannot be avoided by the offer to enter into a protective order. The issue of the protective order is only relevant if the party seeking production first proves reasonable necessity and the Court orders production of the privileged materials, in which case a protective order can be entered to minimize the harm that production would otherwise cause. § 90.506, Fla. Stat. (“[w]hen the court directs disclosure, it shall take the protective measures that the interests of the parties, and the furtherance of justice require”). *See Rare Coin-It, Inc. v. I.J.E., Inc.*, 625 So. 2d 1277 (Fla. 3d DCA 1993):

Production of the source code, without a showing and finding of reasonable necessity, would cause Rare irreparable harm. This is true even when the trial court orders production subject to a protective order.

See also American Express Travel Related Services, Inc. v. Cruz, 761 So. 2d 1206, 1209 (Fla. 4th DCA 2000).

1. **Plaintiffs Have Failed To Show The Reasonable Necessity For Conducting Their Own Invasive Tests On ES&S' Source Code, Where The State Has Already Used Other Reasonable Testing Procedures That Showed There Was No Machine Malfunction, And Plaintiffs Offered No Proof That The State's Testing Procedures Were Inadequate.**

As stated above, in order to show the necessity of obtaining ES&S' Source Code and Proprietary Technology, Plaintiffs must show that there is no other, reasonable way for them to establish that the iVotronic voting machines malfunctioned. Plaintiffs have simply failed to make such a showing, as the evidence establishes that there are indeed other means for the Plaintiffs to ascertain whether their "software bug hypothesis" is true or not.

First, parallel tests can be conducted on the iVotronic voting machines which do not depend on the examination of the source code. In fact, the state has already conducted two such parallel tests, which demonstrated that there was no voting system malfunction. The state's report on those parallel tests, which was admitted into evidence as ES&S Exhibit 7, states in relevant part as follows:

[A] parallel test involves a random selection of voting devices from the population of voting devices destined for deployment on election day. This test sample . . . would undergo the same election day activities in "parallel" with the deployed voting devices, except the voters would consist of a test team and the ballots cast would be defined by a predetermined test script. The intent of this parallel activity is to ascertain the accuracy and reliability of the deployed voting devices with consideration given to ballot style, layout, coding demographics and operation.

* * *

This series of parallel tests demonstrated that the iVotronic touchscreens did not exhibit pervasive malfunctioning. There are no indications of machine bias or otherwise voting machine faults that would yield rejected legal votes. The claims made that votes were lost due to touchscreen malfunction are not supported by the results of this test. . . . In summary, there is no evidence to support the position that the iVotronic touchscreens caused votes to be lost.

(Emphasis added) The state allowed Plaintiff Jennings to monitor and provide input into these parallel tests. Notably, Plaintiffs offered no evidence at the hearing to demonstrate that the parallel tests were inadequate to identify a potential malfunction in the voting system.

In addition to parallel tests, the Plaintiffs will also have available to them the results of a source code review that is to be performed by the state's independent experts. As discussed further below, this is an acceptable alternative, since there is nothing in the discovery rules that requires that the source code review be done by the Plaintiffs. To the contrary, Plaintiffs have no right to access the state's electronic voting machine to personally conduct the source code review under the election laws. Even under the discovery rules Plaintiffs would have no right to unfettered access to the voting system absent a showing that a malfunction was the likely cause of the undervote, and absent a showing that there is no less intrusive manner to obtain the information Plaintiffs say they need. Here, there is in fact a less intrusive means, which is to have the state conduct the source code review.

2. Plaintiffs Should Not Be Permitted To Have Access To The Source Code And Risk The State's Voting Security Based On The Mere Allegation And Sheer Speculation That A Machine Malfunction Was The Cause Of The Undervote.

In this case, the Plaintiffs' request to probe and tear apart the voting machines fishing for a malfunction has to be balanced against the state's critical interest and statutory duty to maintain the integrity and security of the state's voting system. Indeed, Plaintiffs appear to have no right to possess the state's voting machines, notwithstanding the discovery rules, because the Florida Legislature has expressly limited access to the voting machines and ballots to the agencies of the state of Florida and their representatives who are charged with overseeing the elections process. *See, e.g.*, §§ 101.34 (custody of voting system; "[t]he supervisor of elections shall be the custodian of the voting system in the county"); 101.572 ("no persons other than the supervisor of

elections or his or her employees or the county canvassing board shall handle any official ballot or ballot card”). *See also* Rule 1S-9.005(5)(c), F.A.C. (“any ballot transportation or tabulation must be done under the supervision and control of the affected supervisor of elections or municipal clerk who shall at all times have the responsibility to ensure the safety and safekeeping of the ballots and election results”).

Consistently, the Florida Legislature has expressly precluded the public’s access to the source code for the electronic voting machines filed with the Department of State by the supervisors of election. *See* §§ 101.5607(1)(d) (“Section 119.071(1)(f) applies to all software on file with the Department of State”); 119.071(1)(f) (“[d]ata processing software obtained by an agency under a licensing agreement that prohibits its disclosure and which software is a trade secret . . . are exempt from s. 119.071(1) and s. 24(a), Art. I of the State Constitution”). Moreover, the Florida Legislature has only authorized certain public entities or their agents to test the voting systems, which would include the underlying source codes. *See, e.g.*, §§ 101.5607(1)(b) (“[t]he Department of State may, at any time, review the voting system of any county to ensure compliance with the Electronic Voting Systems Act”); 101.58(1) (“[t]he Department of State may, at any time it deems fit . . . or upon the petition of any candidate . . . appoint one or more deputies whose duties shall be to observe and examine the . . . condition, custody, and operation of voting systems and equipment in any county or municipality”); 101.5612(2) (requiring the supervisor of elections to publicly test the voting systems to confirm that they will correctly count the votes cast, and allowing each political party to designate a person to be present during such tests, but stating that such “designee shall not interfere with the normal operation of the canvassing board”), Fla. Stat. Clearly, then, the Florida Legislature intended to exclude persons like the Plaintiffs from having physical possession or access to the

electronic voting machines. *Jackson County Hospital*, 835 So. 2d at 329 (Fla. 1st DCA 2003) (“when ‘a statute specifically enumerates those persons to be covered, ordinarily the statute will be construed as excluding from its operation all those other persons not expressly mentioned’”)

The state does not lose its exclusive right and obligation to maintain the integrity and security of its election systems merely because someone has challenged the results of an election. *See Wexler v. Lepore*, 342 F. Supp.2d 1097, 1108 (S.D. Fla. 2004):

Concerns about physical and communication security, software configuration, and system malfunction are investigated and dealt with by the State during the certification process. Both prior to and after certifying the machines, the State has procedures and testing mechanisms in place to ensure that the machines work accurately.

For instance, in the case of a manual recount, the candidates have no right to obtain the ballots or to conduct the recount themselves. Instead, for security reasons, the ballots must remain in the custody of the state, guarded by sworn law enforcement officers. As a result, in balancing the need for security with the need to assure an open, fair process, it has been determined that the candidates and public should only have a right to be present during any recount. *See, e.g.*, Rule 1S-2.031(3), F.A.C.

In this case, Plaintiffs have cited no statute or rule that would entitle them to obtain the state’s voting system and all the records retained therein (including the electronic ballots of each voter), or to tear apart that system looking for a possible malfunction, simply because they have brought an election contest under Section 102.168, Florida Statutes. If any disgruntled candidate could confiscate the state’s election equipment to conduct her own investigations, based on nothing more than the allegation that there may have been a computer malfunction, the election system could not function. Once the source code is in the hands of private parties, how can the state be assured that the knowledge gained will not be used to hack into the voting system? How

can the state be sure that the disgruntled candidate's expert, when tearing the system apart, will not destroy the records contained therein? If the voting system is in the hands of a disgruntled candidate, how will the state be able to conduct future elections? In fact, Plaintiffs' position in this case may indeed delay the March 13, 2007 municipal elections in Sarasota County. (*See* Voter Plaintiffs' Motion for Entry of Anti-Spoliation Order) Plaintiffs may have the right to observe and challenge the state's procedures for testing the accuracy and reliability of the voting system; however, the election laws do not give them the right to test the voting system themselves.

Even in a case of litigation against a private party, Plaintiffs would not have a right to unfettered access to the computer system of their opponent. In *Eugene J. Strasser, M.D., P.A. v. Bose Yalamanchi, M.D., P.A.*, 669 So. 2d 1142 (Fla. 4th DCA 1996), involving a suit between two doctors, the plaintiff asked "permission to enter defendant's computer system to search for financial information that defendant" claimed had been purged. (*Id.* at 1143) Plaintiff had submitted an affidavit stating that it was "'possible to retrieve information from a computer system even though a purge' has occurred." (*Id.* at 1144)(emphasis added). However, defendant maintained that such records could not be retrieved, and that if plaintiff were given access to the computer system, plaintiff would also have access to confidential files and could potentially harm the computer system by inadvertently deleting files or introducing viruses. Under these circumstances, the appellate court reversed the order of the trial court granting the plaintiff's request, stating:

The harm here is irreparable because once confidential information is disclosed, it cannot be "taken back," and once the wholesale invasion into the defendant's computer system has occurred, the damage to the system may be irreversible.

* * *

Plaintiff's expert C.P.A. states retrieval of purged data is theoretically possible; whereas defendant's computer expert, after having actually logged into the system and searched for any sign of the purged data, states that the purged data is irretrievably gone. Even if plaintiff represents accurately that defendant has been thwarting the discovery process, such conduct does not necessarily invite intrusive discovery where there has been no evidence to establish any likelihood that the purged documents can be retrieved.

If plaintiff can present evidence to demonstrate the likelihood of retrieving purged information, and if the trial court finds that there is no less intrusive manner to obtain the information, then the computer search might be appropriate. . . . One alternative might be for defendant's representative to physically access the computer system in the presence of plaintiff's representative under an agreed-upon set of procedures to test plaintiff's theory that it is possible to retrieve this purged data.

Id. at 1145 (emphasis added). *See also Menke v. Broward County School Board*, 916 So. 2d 8

(Fla. 4th DCA 2005), stating:

In the only Florida appellate court opinion discussing electronic discovery, we held that rule 1.350(a)(3) was broad enough to encompass requests to examine a computer hard drive but only in limited and strictly controlled circumstances, acknowledging that unlimited access to anything on the computer would constitute irreparable harm, because it would expose confidential, privileged information to the opposing party. . . . Thus, intrusive searching of the entire computer by an opposing party should not be the first means of obtaining the relevant information.

Where a need for electronically stored information is demanded, such searching should first be done by defendant so as to protect confidential information, unless, of course, there is evidence of data destruction designed to prevent the discovery of relevant evidence in the particular case. . . . In fact in the few cases we have found across the country permitting access to another party's computer, all have been in situations where evidence of intentional deletion of data was present. [Citations omitted]

Here, there is no evidence of any destruction of evidence or thwarting of discovery. It does not appear from the record provided that any other method of discovery of relevant

information has been requested There is also no proof that there is no less intrusive method of obtaining the information.

Id. at 11-12 (emphasis added).

Menke and Strasser, supra, refute Plaintiffs' position in this case that they have the right to possess and personally conduct whatever tests they want on the state's electronic voting system, which is even more critical and deserving of even more protection than the private computer systems at issue in those cases. In fact, there is no such right under the discovery rules where, as here, there is evidence of other less intrusive methods that are available for obtaining the information Plaintiffs say they need. This would include having the state conduct parallel tests, which it has already done, and reviewing the source code, which it is about to do, with the Plaintiffs having the right to review and object to the state's procedures if Plaintiffs' deem them to be inadequate. Given the state's responsibilities for maintaining the integrity and security of the voting system, and the risk to that system if it is turned over to the Plaintiffs, having the state test the voting system at issue is the only appropriate way to proceed to test the veracity of Plaintiffs' allegations. In this regard, ES&S would not object to a process in which the Court appointed its own independent expert to observe the work performed by the state's independent experts. This individual could report directly to the Court under appropriate protections that maintain the confidentiality of the materials to which he or she would have access.

Even in the absence of a "less intrusive manner to obtain the information," Plaintiffs should not be permitted access to the state's electronic voting system, which includes ES&S' Source Code and Proprietary Technology, based on nothing more than the bare allegation that the undervote may have been caused by a malfunction. In *Strasser, supra*, the Court refused to permit plaintiff access to the computer system at issue there unless the plaintiff first proved a

likelihood of being able to retrieve the purged files; only after the plaintiff met this burden would the court then consider the restrictions that should be imposed on that access.

Here, Plaintiffs are attempting to overcome ES&S' trade secret objection based on nothing more than the bare allegation that the undervote in Sarasota County was caused by a malfunction of the voting machines in question. Plaintiffs attempted to buttress this allegation with expert testimony, but, at most, this testimony establishes that a malfunction was a "possible" cause of the undervote. In fact, neither of Plaintiffs' proffered experts could identify any specific problem associated with the use of the machines or say with any reasonable degree of certainty that a software "bug" or machine malfunction caused the undervote.

For instance, Plaintiffs' expert Charles Stewart admitted that he could not testify that a machine malfunction was a likely cause. Instead, Stewart retreated to the position that it was very likely that the excessively high undervote rates were caused by the use of iVotronic electronic voting machines. However, Stewart conceded that this is not the same thing as saying the undervote was caused by a machine malfunction, as the "use" of the voting machines would also include what a voter saw on the machine's touch screen, that is, the ballot layout. (Transcript, Vol.1 at 80, 82-83) In other words, according to Stewart, the cause of the undervote was the ballot layout, or a machine malfunction, or both. Indeed, Stewart admitted that the only evidence he had that a machine malfunction caused the undervotes was an unverified newspaper report that most callers to the newspaper reported voting problems. (Transcript, Vol.1 at.89-90)

In this regard, the only credible testimony as to the likely cause of the undervote was provided by ES&S' expert Michael Herron, who testified that the undervote was "almost certainly" caused by the confusing ballot layout. Herron's testimony was buttressed by the fact that a high undervote rate was also experienced in other races in Charlotte and Lee Counties

where a comparable ballot layout was used. Although Plaintiffs' expert Charles Stewart noted that the voter "confusion rate" in two other elections were lower than the undervote rate experienced in Sarasota County, the two other elections he looked at did not involve instances of undervotes caused by ballot confusion, and he did not take into account any elections where a similar ballot layout was used. (Transcript, Vol. 1 at 91-93)

In short, Plaintiffs would have to admit that anytime an undervote occurs, a malfunction is a "possible" cause. Because an undervote occurs in every election, if Plaintiffs' argument is accepted, then in every election, the losing candidate will have a right to examine the source code, and whatever else he wants, to confirm whether there was a malfunction or not. Such a result is not only antithetical to this state's election laws; it is also contrary to the basic rules of discovery.

III. EVIDENTIARY HEARING

A. Summary of Witnesses and Exhibits

On December 19 and 20, 2006, this Court conducted an evidentiary hearing on the Motions to Compel and Motions for Protective Order. Plaintiff Jennings called two witnesses: Professors Charles Stewart III and Dan Seth Wallach and put Exhibits 1 through 10 into evidence. Defendant ES&S called Professor Michael Herron and put Exhibits 1 through 8 into evidence. From the testimony given and the exhibits introduced, certain facts have been established which bear on the pending motions.

Vern Buchanan, a Republican, and Christine Jennings, a Democrat, were candidates for the United States House of Representatives in Florida's 13th Congressional District. This congressional district comprises all of Sarasota, Hardee, and Desoto Counties, as well as parts of

Charlotte and Manatee Counties. The general election was held on November 7, 2006 and the results of that election were as follows:

	Vern Buchanan (REP)	Christine Jennings (DEM)
Total	119,309	118,940
% Votes	50.1%	49.91%

A total of 369 votes separated Buchanan, the winning candidate, from Jennings. The total vote in Sarasota County for the District 13 race was as follows:

	Vern Buchanan (REP)	Christine Jennings (DEM)
Sarasota	56,632	65,487
% Votes	46.4%	53.6%

The official results showed that there were 18,412 undervotes in this election, meaning no vote was recorded for either candidate from voters who participated in either early voting or election day voting. Therefore, 12.9 percent of the voters who went to the polls did not cast a vote in this race. The vote in Sarasota County, broken out by the way in which voters cast their ballots, was as follows:

	Total	Percent	Election Day	Early Voting	Absentee	Prov.
Buchanan	58,632	47.24%	36,619	10,890	11,065	58
Jennings	65,487	52.76%	39,930	14,509	10,981	67
Overvotes	0	0	0	0	1	0
Undervotes	18,412		12,378	5,433	566	35

Because the results of the election were so close, a manual recount was ordered for the entire district. The results of the recount did not change the result and Vern Buchanan was declared the winner.

B. Evidence of Pre-election Certifications and Logic and Accuracy Testing Demonstrates that iVotronic Voting Machines Were Working Properly on Election Day.

Sarasota County uses optical scan ballots for absentee voters and ES&S iVotronic voting machines in early and absentee voting. The iVotronic machines use ES&S' Release 4.5, Version 2 software. On July 17, 2006, Dawn K. Roberts, Director of the Division of Elections of the Florida Department of State, issued certification pursuant to Section 101.015, Florida Statutes, allowing Release 4.5, Version 2 to be used in the state of Florida by counties employing the iVotronic machines. (*See* ES&S Exhibit 4) This was the software used by Sarasota County on its iVotronics during early voting and election day voting.

In order to be used in early voting and on election day, both the iVotronics machines and the software had to be tested. Even Professor Wallach testified that the state of Florida conducts its own testing and that the machinery and software had to comply with federal regulations.

Before the iVotronics were deployed for early voting and election day voting, Sarasota County gave notice that it would be conducting logic and accuracy testing of the iVotronics pursuant to state law. Section 101.5612(1) provides:

(1) All electronic or electromechanical voting systems shall be thoroughly tested at the conclusion of maintenance and programming. Tests shall be sufficient to determine that the voting system is properly programmed, the election is correctly defined on the voting system, and all of the voting system input, output, and communication devices are working properly.

The logic and accuracy test, which must be conducted at least 10 days prior to the commencement of early voting, is done in public to verify that all equipment will "correctly count the votes cast for all offices and on all measures." Sec. 101.5612(2). Section 101.5612(4)(a)(1) specifically provides:

(4)(a)1. For electronic or electromechanical voting systems configured to include electronic or electromechanical tabulation

devices which are distributed to the precincts, all or a sample of the devices to be used in the election shall be publicly tested. If a sample is to be tested, the sample shall consist of a random selection of at least 5 percent of the devices for an optical scan system or 2 percent of the devices for a touchscreen system or 10 of the devices for either system, as applicable, whichever is greater. *The test shall be conducted by processing a group of ballots, causing the device to output results for the ballots processed, and comparing the output of results to the results expected for the ballots processed.* The group of ballots shall be produced so as to record a predetermined number of valid votes for each candidate and on each measure and to include for each office one or more ballots which have activated voting positions in excess of the number allowed by law in order to test the ability of the tabulating device to reject such votes.

The result of the logic and accuracy test in Sarasota County was that the iVotronics worked properly. (See ES&S Exhibit 6) Plaintiff presented no evidence which challenged the results of the logic and accuracy tests.

C. Post-Election Parallel Tests Provide Clear and Convincing Evidence that iVotronic Voting Machines Accurately Recorded Voters' Choices on Election Day.

Because this was a close election, and because of the allegations of machine malfunctions made by candidate Jennings, the State proceeded to conduct a thorough post-election audit of the voting systems to verify their accuracy. As part of this investigative process, Florida's Division of Elections conducted two parallel tests of the iVotronic touch screen systems. These are the same types of tests that Plaintiffs have asserted were necessary in order to verify the accuracy of the machines. The results of those tests are set forth in the Florida Department of State Division of Election's Parallel Test Summary Report for Sarasota County, Florida dated December 18, 2006. A certified copy of this report was introduced in evidence as ES&S Exhibit 7.

As set forth in the report, testing was conducted on two different occasions, to wit; on November 28, 2006 and on December 1, 2006. "The parallel tests focus on the iVotronic touch screen's ability to accurately record a voter's selections as presented to the voter on the touch

screen's ballot review pages. In addition, the parallel tests also examined various complaints regarding a voter's ability or difficulty in making his or her vote selections." (ES&S Exhibit 7 at page 2) The Bureau of Voting Systems Certification ("BVSC") designed the test scripts with two objectives in mind; first, to replicate the Election Day environment with respect to ballots cast and the frequency of use of each machine, and second, to identify any latent issues with respect to making a vote selection.

1. Parallel Test Conducted on November 28, 2006.

The November 28, 2006, parallel test utilized a random selection of iVotronic machines from a pool of machines that were not deployed during the general election. The test scripts that were developed for use by "test-voters" were based on the audit data extracted from a sample of iVotronic touch screen devices. Additionally, test scripts also considered the voting experience of several voters that were described in various news articles. Five machines were selected to perform the test. Four machines were tested using the pre-determined scripts and the remaining iVotronic served as an *ad hoc* test article. The machines were set up in a vertical orientation to allow the public to witness the test team's interaction with the touch screens and to facilitate videotaping the tests. Five video cameras were utilized to record the test-voter's interaction with the machines. The public was able to observe the test through a set of windows as well as wide screen monitors in the public viewing area. Representatives of the Jennings and Buchanan campaigns were present for the test.

As documented in the report, the majority of the test-voters who participated in the test did not have any prior experience with election touch screen voting systems. These test-voters proceeded to cast the votes on the machine and perform different functions (moving back and forth between the screens based on a pre-determined script). At the conclusion of the test, the

results reported by the machines were compared to the pre-determined scripts. There were several variances noted. On November 28 and 29, the BVSC proceeded to reconcile and identify the reason for these variances, using among other tools, the video recordings of the test voter's interaction with the machine. This process was conducted in the presence of technical representatives of both candidates' campaigns. All variances were proven to be the result of human error, not machine malfunction. After all variances were successfully reconciled, the test results demonstrated 100% accuracy of the iVotronic equipment in reporting the vote selections as indicated on the review screens. As noted in the report "there were no unresolved anomalies." The report notes that "attempts to replicate the published reports concerning voter difficulties in making or changing their vote selections did not materialize during this test." (*Id* at page 8)

2. The December 1, 2006 Parallel Test.

The second test utilized five selected iVotronic machines that were actually deployed on Election Day. Ancillary equipment such as the master Personalized Electronic Ballots ("PEB"), poll worker activated PEBs, and compact flash cards that were used on election day were also employed. BVSC also accepted "constructive feedback provided by the Jennings organization and experience gained from the first parallel test" to "substantially improve its test documentation during the second parallel tests." (*Id* at page 6)

BVSC asked each candidate to provide a list of precincts that in their opinion "warrant close examination." (*Id.* at page 8) The Jennings campaign provided a list of precincts. The Buchanan campaign recommended a random selection. Two machines that experienced the highest percentage of undervotes were randomly selected from the precincts identified by the Jennings campaign, and two machines were identified through a random selection process using

MS Excel. BVSC provided this opportunity for candidates to select the machines to be employed because “This selection should enhance the probability of revealing the undervote anomaly, should it exist.” (*Id* at page3) The fifth machine was a touch screen from Precinct 117. This was utilized for the same *ad hoc* exercise performed in the first parallel test. The test proceeded as set forth above, and upon conclusion of the test, variances were also observed.

On December 5, in the presence of Jennings’ technical representatives and the media, the results of the second parallel test were reconciled. The few variances observed were again conclusively proven to be a result of human error, not machine malfunction. Therefore, the second test was also successful “in demonstrating 100% accuracy in recording the vote selections.” (*Id.* at page 8)

As a result of these two tests, the Division of Elections rightfully concluded that “There are no indications of machine bias or otherwise voting machine faults that would yield rejected legal votes. The claims made that votes were lost due to touch screen malfunction are not supported by the results of this test.” (*Id* at page 8)

3. Plaintiffs Presented no Evidence to Demonstrate that the Parallel Tests Were Flawed, or the Results Were not Valid.

Although Plaintiffs were shouldered with the burden of proving reasonable necessity, they produced no evidence whatsoever to demonstrate that the methodology of the parallel tests was in any way flawed, or that the results were not accurate and verifiable. The only indication in the record that the Plaintiffs contest the result of the parallel test is through the summary responses made by Professor Wallach during cross-examination. In his testimony, Professor Wallach testified that, although he was not present when the parallel tests were conducted, it was his understanding that the screens were positioned in a vertical fashion, and that there were no testers chosen with trembling hands or fingers.

In contrast, the report notes that “criticisms that the test arrangement and/or the team make up influenced the accuracy of the touch screens are unfounded. The purpose of this test is to determine whether the iVotronic touch screens encountered persuasive malfunctioning or irregularities that contributed to the observed undervote count for the 13th Congressional District Race.” (*Id.* at page 8) The report goes on to state that “the process of selecting one’s choice is not a measure of the voting device’s accuracy. Accuracy is relevant to the information presented to the voter on the review screens and ultimately captured as a ballot cast upon a positive action by the voter after that voter has advanced to all the review screens and after making any desired changes to the vote selection. The sample size for these tests, a total of 10 units, is more than adequate to identify any machine malfunctions, faulty machines, machine bias or irregularities that could have contributed to the observed undervotes for this race.” (*Id.* at page 8-9) The report concludes by stating that “**In summary, there is no evidence to support the position that the iVotronic touch screens caused votes to be lost**” (*Id.* at page 9) (**emphasis added**).

The results of the parallel tests are compelling and unrefuted evidence that voting machine malfunction did not cause the elevated rate of undervotes in Sarasota County. With no direct, or even indirect evidence that a machine malfunction or software bug caused the undervote, Plaintiffs have failed to establish through evidence that there is a reasonable necessity for this Court to require the production of ES&S’ Source Code and Proprietary Equipment.

D. Plaintiffs’ “Evidence” is Mere Conjecture Not Supported By Credible Evidence and Cannot Support a Finding of Reasonable Necessity.

The evidence adduced at the hearing in this matter leads to one inevitable conclusion: that the Plaintiff has failed to demonstrate, after balancing the interests of the parties, that it should be granted free access to ES&S’ trade secrets.

Both parties agree that there were an unusually large number of undervotes in District 13. However, the analysis conducted by the Plaintiff's experts stopped at the borders of Sarasota County, while the analysis performed by ES&S' expert, Professor Michael Herron, reviewed the results in numerous Florida counties that used the iVotronic machines.

Professor Charles Stewart III, a political science professor from the Massachusetts Institute of Technology, was called by the Plaintiff. On cross-examination, he admitted that he had not addressed the undervotes that occurred in other races in Sarasota County or in any races in Charlotte County. (Transcript, Vol. 1 at 80-81). He admitted that he did not do any analysis of the ballot layout differences between Charlotte and Sarasota Counties. (*Id.* at 82) Stewart admitted that his conclusion that the high undervote rate was "caused by the use of the iVotronic electronic voting machines" is not the same as saying it was caused by a machine malfunction or a software bug. (*Id.* at 82-83) He also testified that the conclusion he reached was not inconsistent with the undervote having been caused by the ballot design in Sarasota County. (*Id.* at 83) Further, Stewart admitted that the higher undervote rate in Sarasota County alone did not allow him to rule out ballot layout as a cause of the undervote. (*Id.* at 84)

Stewart also testified that he had no statistical analysis which gave direct evidence of any particular cause of the undervote. (*Id.* at 85-86) In his prepared report, Stewart did not provide any evidence that a physical malfunction caused the undervote. (*Id.* at 87) The only "evidence" that Stewart reviewed to support his assertions concerning malfunctions was a newspaper article, but Stewart did not interview any voters, nor could he identify a single voter who was prevented from casting a ballot in District 13. (*Id.* at 90)

Stewart spent the bulk of his time on direct examination assuming, without saying how, votes were cast but lost, and then trying to mathematically calculate how these lost votes should

have been allocated between Buchanan and Jennings. Not surprisingly, in every scenario he described, Stewart determined that Jennings would have won the election.

The Plaintiff's second expert, Dan Seth Wallach, a computer science professor at Rice University, expressed a desire to see the source code from the iVotronics and the software used to process the election results, as well as to perform a mechanical autopsy on the iVotronic machines themselves and the personal electronic ballot ("PEB") units used to activate the iVotronics. However, he offered little more than conjecture on what caused the undervoting.

As noted above, Wallach was not present at the logic and accuracy test conducting by Sarasota prior to the November election, nor had he, at the time of his testimony, even read the report of the results of the parallel test. Wallach's bias was demonstrated when he testified that he was associated with a group known as "thecomputeratemyvote.org" and that he has been critical of all electronic voting systems that do not use a paper trail. (Transcript, Vol. 2 at 3-4) Further, Wallach testified that it was his position that the source code for all electronic voting machines should be available for review by everyone and that "secrecy is not appropriate in elections systems." (Transcript, Vol. 2 at 25-2.)

Wallach introduced a small computer program, Plaintiffs' Exhibit 10, which he wrote not only to show what source code looks like, but to demonstrate how software can contain "bugs". The program he wrote would tally votes for three candidates and would accurately reflect the votes of the first two candidates, but would report the votes cast for the third candidate totaled with the votes cast for the other two. However, on cross examination Wallach admitted that since the total votes cast for all candidates would be higher than the number of actual voters, it would not be necessary to examine the source code of the program to see that it was defective. (Transcript, Vol. 2 at 8-10)

Nevertheless, Wallach testified that it did not matter whether a candidate lost by 10, 20, or 50 percentage points, he would still want to see the source code. (Transcript, Vol. 2 at 13-14) Wallach also admitted that a review of the source code sought here might not reveal the existence of a problem for years, assuming one exists. (Transcript, Vol. 2 at 11-12)

Wallach admitted that the undervote rate could have been caused by voter abstention. He hypothesized that it could have been caused by human error, where some voters missed the race. He stated that there were several ways to validate the hypothesis. Wallach admitted that one tool, voter surveys, would not yield accurate results because respondents could lie to help their candidates. (Transcript, Vol. 2 at 14) In order to verify the vote confusion hypothesis, he wrote in his report and confirmed on the stand that if other races in Florida used the same iVotronic equipment and ballot screen layout, then a statistical analysis could determine whether a similar undervote occurred. (Transcript, Vol. 2 at 17) He also posited that a parallel test could be conducted, using a script of known votes for candidates, to determine whether the machines accurately recorded the votes. (Transcript, Vol. 2 at 22)

Wallach's third hypothesis was that the number of undervotes might be due to a software "bug." Again, he suggested that one way to test would be to conduct a parallel test and compare the machine reported totals to the original input. He also suggested that the undervote might be explained by post-election corruption, which could be tested by downloading the voting records from each machine and retabulating them. (Transcript, Vol. 2 at 24-25) Wallach admitted that the recount process, which was conducted in this election, provided a check against this form of corruption and that there was no evidence of corruption either in the form of people giving bribes or the election data itself becoming corrupted. (*Id.*) Finally, he speculated that malicious software might have been introduced on a particular machine. (*Id.* at 25) Exploring this

hypothesis would require physically disassembling each suspected machine to access its internal memory chips to drain their contents. Because Wallach suspected the possibility of widespread software problems, he would seem to be asking for the right to disassemble every iVotronic owned by Sarasota County. However, he admitted on cross-examination that there was no evidence of malicious software being used in this election. (*Id.*)

The testimony of both Stewart and Wallach only raise questions that they cannot answer. Plaintiff, however, does not shoulder its burden of proof by having its experts posit several hypotheses accompanied by shrugs of their shoulders when asked to affirmatively declare what happened. Both Stewart and Wallach's testimony simply raise many academic questions and, in doing so, fail to provide the required proof that there is a reasonable necessity to overcome ES&S' rights to keep its trade secrets confidential.

E. Professor Herron's Analysis, Which Followed Methodology Suggested by Plaintiffs' Expert Witness, Professor Wallach, Provides Compelling Evidence of the Likely Cause of the Undervote.

Notwithstanding the lack of proof put on by the Plaintiffs, Defendant ES&S provided compelling evidence that the undervote was caused by the ballot format used in Sarasota County, as opposed to a problem with the hardware and software.

Professor Michael Herron, a political science professor at Dartmouth College, performed the wide-ranging statistical analysis advocated by Wallach, which Professor Stewart was either unwilling or unable to perform. Professor Herron presented evidence that the undervote in Sarasota County was not the result of a mechanical or software problem, but was caused by the ballot design chosen by Sarasota County.

To conduct his research, Professor Herron gathered precinct data from Sarasota County, plus precinct data from Broward, Charlotte, Collier, Desoto, Hardee, Hillsborough, Jackson, Lake, Lee, Manatee, Martin, Miami-Dade, Nassau, Palm Beach, Pasco, Pinellas, and Sumter

Counties. (Transcript, Vol. 2 at 88-89) He was also able to collect from these counties the ballot images, the records of how individual voters voted, but stripped of any identifying information, such as name or ethnicity, or even the time that the voter cast his ballot on the machine. (Transcript, Vol. 2 at 90)

In Sarasota County, the U.S. Senate race was shown on the first ballot screen, listing six candidates and a line to write in a candidate's name. The second page showed two races: District 13, with its two candidates, Buchanan and Jennings, and the Governor's race, with six candidates and a space for a write-in. (Transcript, Vol. 2 at 91-92)

Herron found that those voters who skipped races, and therefore undervoted, generally skipped numerous elections. For example, he found that voters who skipped the U.S. Senate race tended, on average to skip an average of 10.8 races, while voters who voted in the Senate race skipped, on average, only 2.8 other races. Similarly, those voters who skipped the Governor, Attorney General, Chief Financial Officer, or Agriculture Commissioner tended to skip, on average 9.6 to 13.1 other races. However, the voters who undervoted in the District 13 election only skipped an average of 4.7 elections. (*See* ES&S Exhibit 8, at 25 of 39)

This caused to Herron to investigate further. He sorted the ballot images of voters who undervoted in District 13 and grouped them by similarity of voting pattern. Persons who voted a straight Republican and straight Democratic ticket recorded undervoters, as did those voters who split their tickets among the top statewide races, the Charter Review Commission seats, the judicial retention elections, and the State constitutional amendments. In short, Herron did not find any "magic" combinations of votes cast which were likely to trigger an undervote. (*See* ES&S Exhibit 8, at 12 of 39) In fact, when Herron plotted the different combinations of voting

patterns, he found that Republicans were just as likely, and unlikely for that matter, to have undervoted as Democrats.

That caused Herron to widen his analysis beyond District 13. He found factors which could have contributed to the undervote. While there was no correlation between the age of a voter and his or her undervote in the U.S. Senate race, there was a correlation between the age of the voters and their undervoting in the District 13 election. (*See* ES&S Exhibit 8, at 16 of 39)

Herron also investigated whether the ballot format in District 13 could explain the unusually high rate of undervoting. In Charlotte County, the U.S. Senate race was on the first ballot screen by itself, and the District 13 race was on the second page, also by itself. The third page had the Governor's race on the top of the third page, with the Attorney General's race on the bottom of that page. In Charlotte, the undervote rates in the Senate and Governor races were relatively low, while 11,377 of the 55,774 voters who voted in Charlotte County did not vote in the Attorney General's race, for an undervote rate of 25 percent, which was higher than in Sarasota County's District 13. (*See* ES&S Exhibit 8, at 26 of 39) Moreover, the voters who skipped the Senate, Gubernatorial, CFO, and Agriculture Commissioner tended to skip, on average, between 8.8 and 10.5 other elections, while voters who skipped the Attorney General race only skipped an average of 3.8 other races.

The ballot in Lee County followed a format similar to that used in Charlotte County, with the Attorney General's race below the Governor's, after being preceded by the Senate race by itself on the first page. In Lee County, there were 26,864 undervotes in the Attorney General race, for a total undervote rate of 21 percent, which again, was higher than in Sarasota County's District 13 race. The voters who skipped the Senate, Gubernatorial, CFO, and Agriculture Commissioner tended to skip, on average, between 12 and 14 other elections, while voters who

skipped the Attorney General race only skipped an average of 6.3 other races. (See ES&S Exhibit 8, at 26 of 39)

Herron also found this same pattern in Sumter County, which put the Attorney General's race below the Governor's race and after a single screen containing the Senate race. There, the undervote rate in the Attorney General's race was 24 percent, higher than the undervote rate seen in the District 13 race in Sarasota. The patterns previously discussed show up in this county, as well.

Herron also examined ballot formats in Collier, Jackson, Miami-Dade, Lake, Nassau, and Pasco counties. In those counties where there were multiple candidates on a page before a voter encountered the Attorney General's race, Herron did not find an elevated level of undervoting.

From this multi-county review of ballot formats and image files of actual votes cast, Herron concluded that voters appear to be primed by the initial number of races per ballot page. When there is only a single race on the first page of a ballot or single races on the first several pages, voters are more likely to be confused and undervote on the first page thereafter which contains multiple races, which is what occurred in Sarasota County in the Congressional District 13 race. Herron also demonstrated that voter confusion can be aggravated by certain demographic characteristics, such as the advanced age of the voter.

The statistical and testimonial evidence provided by ES&S convincingly demonstrates that the "likely cause" of the undervotes was voter confusion due to the ballot layout.

F. The State's Impending Source Code Review Undermines The Plaintiff's Argument That It Should Be Given Access To The Source Code And Proprietary Technology

The source code review that the Plaintiffs seek will not be independent and unbiased. As the testimony of Professor Wallach amply demonstrated, he is an advocate for open source election machine software who has stated that he may, or may not, be able to find a software

problem if one actually exists. However, as was discussed at the evidentiary hearing in this matter, Wallach is not the only person who can do a source code review.

The State of Florida is in the process of finalizing and executing an agreement for a truly independent review of the source code with the Florida State University SAIT Laboratory, using a team of experts who are not employed by Plaintiffs, Buchanan, or ES&S. An objective review under the auspices of the State Division of Elections, the agency charged with maintaining the secrecy and security of the source code, as well as the integrity of Florida's voting system, is a more reasoned, and reasonable alternative, to the admittedly biased approach of Plaintiffs' lead computer expert.

The Plaintiffs failed to prove at the evidentiary hearing that the State or the SAIT Lab were incapable of performing a review in a professional and unbiased manner. As noted above, ES&S' Source Code and Proprietary Technology has already been the subject of review by the federal government, by independent testing laboratories, and the state of Florida, itself. These reviews, however, have all been done in a way that not only protects ES&S' proprietary interests, but also maintains the security of the State's voting systems.

Although ES&S does not believe that there is a need for source code review in this case, should the Court find that there is some justification for it, then the Court should appoint its own independent expert to observe the work performed by the SAIT Lab. That way, the expert could report directly to the Court, without the danger of the state's election system being compromised or ES&S' trade secrets being disclosed.

IV. IF REASONABLE NECESSITY IS FOUND, THE PROTECTIVE ORDER PROPOSED BY PLAINTIFFS IS INADEQUATE TO PROTECT THE CONFIDENTIALITY OF THE SOURCE CODE AND PROPRIETARY TECHNOLOGY.

The Court need only consider Plaintiff Jennings' Motion for Entry of a Protective Order if this Court finds, by a preponderance of the evidence, that Plaintiffs have established reasonable necessity for production of the Source Code and Proprietary Technology and if the Court concludes that production of the state's voting system to a private party is not inconsistent with the election laws. If production is ordered, a protective order should be entered to minimize the harm that production would otherwise cause. § 90.506, Fla. Stat. ("[w]hen the court directs disclosure, it shall take the protective measures that the interests of the parties, and the furtherance of justice require"). *See Rare Coin-It, Inc. v. I.J.E., Inc.*, 625 So. 2d 1277 (Fla. 3d DCA 1993):

Production of the source code, without a showing and finding of reasonable necessity, would cause Rare irreparable harm. This is true even when the trial court orders production subject to a protective order.

See also American Express Travel Related Services, Inc. v. Cruz, 761 So. 2d 1206, 1209 (Fla. 4th DCA 2000).

Here, the protective order proposed by Plaintiffs is woefully inadequate to provide the protection needed to minimize the harm to ES&S from the production of its trade secrets. For example, the list of persons in paragraph 2 of the proposed order is so broad that almost anyone could have access to the Source Code and Proprietary Technology. Highly confidential trade secret information such as the Source Code and Proprietary Technology should be limited to only outside counsel of the parties and to the two expert consultants identified by Plaintiffs.

The proposed protective order is also inadequate because it does not provide any procedures or restrictions on how the Source Code and Proprietary Technology can be examined, copied, tested, or transported. For example, when source code is to be produced it is common for protective orders to include provisions requiring production to take place in a “clean room” with detailed instructions as to what can be done with the material produced. Attached as an example of this type order is the Modified Stipulated Protective Order in the case of *Conroy v. Ginnette Dennis, Colorado Secretary of State*. The *Conroy* case was referred to by Plaintiff Jennings expert, Professor Wallach, in his declaration that is attached as an exhibit to the amended complaint and about which he testified at the hearing. Professor Wallach was an expert witness in the *Conroy* case and subject to the modified protective order which provided first that source code would not be produced and then required that other “Security Information” would only be made available to plaintiffs’ attorneys and two designated experts, one of which was Professor Wallach. The protective order further provided that production would only be made in a designated inspection room at the office of the Colorado Attorney General and that the only thing the attorneys and experts could bring into the inspection room were notepads and pens. The order specifically prohibited the persons reviewing the material from bringing cellphones, PDAs, cameras, laptops, recording devices or any similar electronic equipment into the inspection room. The order prohibited any copying of the documents and required that any notes made were to be filed under seal with the court. Finally, the order provided that a representative of the producing party could be present to ensure that the restrictions imposed by the Court were carried out. (Modified Protective Order, page 4 sub-paragraphs 5d,e, f. attached hereto as Exhibit B) The need for detailed specificity regarding the procedures for production and very tight confidentiality requirements is evidenced by Defendant Kathy Dent’s Post Hearing Brief,

filed on December 21, 2006. As Defendant Dent's brief makes clear, there are a multitude of issues that are not addressed by Plaintiffs' proposed protective order with regard to the production and inspection of ES&S' Source Code and Proprietary Equipment and if production is to be required, all of these issue need to be addressed and clarified by any protective order that might be entered.

Because the evidentiary hearing was limited to the issue of reasonable necessity, there was no evidence or argument submitted to the Court regarding the adequacy of the protective order proposed by Plaintiff Jennings. Indeed, consideration of what terms should be included in a protective order is inappropriate unless and until this Court determines whether Plaintiffs' evidence submitted at the hearing establishes reasonable necessity by a preponderance of the evidence.

Accordingly, ES&S respectfully requests that, if this Court determines that Plaintiffs have established reasonable necessity, ES&S be given an opportunity to be heard and present to the Court a proposed protective order containing provisions that ES&S believes will minimize the harm that will occur if production of the Source Code and Proprietary Equipment is ordered.

V. CONCLUSION

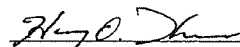
Beyond the testimony of Professor Herron, the evidence from the initial logic and accuracy test and the later parallel tests conducted on the Sarasota County iVotronic machines, which was un rebutted by the Plaintiff, showed that these systems performed as they were designed and accurately recorded the votes which were input into them. These tests, and the upcoming source code review by the state, establish a less intrusive method for determining whether machine malfunction caused the undervote in Sarasota County than permitting the

Plaintiffs unfettered access to ES&S' Source Code and Proprietary Equipment, while at the same time preserving the security and integrity of the state's election system.

It defies logic to hypothesize that the voting machines would not show aberrations in the way they handled votes during the logic and accuracy tests or during the two parallel tests, but would only report undervotes on election day and during early voting. Although Wallach would like the Court to believe that the iVotronics are multi-talented computers, in truth they are more accurately single purpose appliances. The only function they perform is the collection of votes cast upon them. The only logical explanation as to why there were undervotes in the District 13 race is that no votes were cast which could be counted. Therefore, Plaintiffs have failed to demonstrate that there is any reasonable necessity to abrogate ES&S' statutorily protected right to maintain the confidentiality of its proprietary trade secret information, and to defeat the state's interest in maintaining the security and integrity of its election systems.

of record on the attached mailing list.

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1401

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Defendant Election Systems & Software, Inc.'s Post-Hearing Closing Argument and Memorandum of Law has been sent by electronic transmission and U.S. Mail on this 22nd day of December, 2006, to all counsel on the attached mailing list.



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IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs.

CASE NO.: 2006-CA-2996

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA, consisting of
Governor Jeb Bush, Chief Financial Officer
Tom Gallagher and State Senator Daniel
Webster, et al.,

Defendants.

PROCEEDINGS:	Hearing
BEFORE:	HONORABLE WILLIAM L. GARY
DATE:	Friday, December 8, 2006
TIME:	Commenced at 2:00 p.m. Concluded at 2:58 p.m.
LOCATION:	301 South Monroe Street Tallahassee, FL
REPORTED BY:	Tracy L. Brown Certified Registered Reporter

ACCURATE STENOGRAPHY REPORTERS, INC.
2894-A REMINGTON GREEN LANE
TALLAHASSEE, FLORIDA 32308
(850) 878-2221

Exhibit A

A-767

1 requirements of law are provided to the owner of
2 the trade secret.

3 The cases cited in our motion, at least two
4 of which speak directly to decisions by trial
5 courts regarding the production of trade secret
6 computer source codes, sets out the steps to be
7 followed by a trial court when the trade secret
8 privilege is asserted as a basis for resisting
9 production.

10 The first step is for the court to determine
11 whether the request for production constitutes
12 trade secret. Here, as I pointed out, Plaintiff
13 Jennings has admitted, at least for purposes of
14 her motion, that what ES&S seeks to protect is a
15 trade secret. Accordingly, we did not expect that
16 we would have to submit evidence to prove the
17 trade secret status of the source code and
18 proprietary equipment.

19 And our estimate of the time required in
20 request for a one-day hearing was premised upon
21 that representation. However, the Fedder
22 Plaintiffs' response that was served on ES&S
23 electronically last evening now makes this an
24 uncertain question.

25 In their opposition to ES&S's motion, the

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1 threshold questions. And they are threshold
2 issues of what's relevant and what discovery we
3 ought to have in this case. Thanks, Judge.

4 THE COURT: Well, what we have scheduled for
5 next Friday at this point in time are two motions
6 to dismiss, one filed by Secretary of State, one
7 filed by the -- one filed by Cobb and one filed by
8 Roberts. Also a motion to compel, motion for
9 protective order. And certainly an evidentiary
10 hearing is probably required as to the reasonable
11 necessity of this information. I think everybody
12 that reads the case law will think, if they really
13 sit down and read it, will agree to that.

14 Here's what I propose to do because I don't
15 think y'all can do it in three hours next Friday.
16 We're going to leave -- so I'm going to partially
17 grant the motion. The two motions to dismiss are
18 still on for next Friday. The motion to compel,
19 motion for protective order which will include any
20 evidentiary hearing that may be required on the
21 issue of reasonable necessity.

22 There is no issue on whether or not we have a
23 trade secret here. Everybody sit up and say
24 that's a trade secret, so for the -- it's a trade
25 secret. That will commence Monday, I believe

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DISTRICT COURT, CITY AND COUNTY OF DENVER, STATE OF COLORADO City and County Building 1437 Bannock Street Denver, Colorado 80204	FILED Document CO Denver County District Court 2nd JD Filing Date: Aug 11 2006 5:52PM MDT Filing ID: 12061227 Review Clerk: Charmaine Bright
Plaintiffs: MYRIAH SULLIVAN CONROY <i>et al.</i> Defendants: GINETTE DENNIS <i>et al.</i>	▲ COURT USE ONLY ▲ Case Number: 06CV6072 Div: 1 Ctmm: 1
Attorneys for Plaintiffs: Paul F. Hultin (Atty. Reg. #0142) Andrew C.S. Efaw (Atty. Reg. #29053) Michael T. Williams (Atty. Reg. #33172) Alissa S. Hecht (Atty. Reg. #36126) Andrew H. Myers (Atty. Reg. #34288) Ramona L. Lampley (Atty. Reg. #37288) Wheeler Trigg Kennedy LLP 1801 California Street, Suite 3600 Denver, CO 80202 Telephone: (303) 244-1800 Facsimile: (303) 244-1879 E-mail: hultin@wtklaw.com; efaw@wtklaw.com; williams@wtklaw.com; hecht@wtklaw.com; myers@wtklaw.com; lampley@wtklaw.com Lowell Finley (<i>Pro Hac Vice</i>) Law Offices of Lowell Finley 1604 Solano Avenue Berkeley, CA 94707-2109 Telephone: (510) 290-8823 Facsimile: (415) 723-7141 lfinley@wwc.com Attorneys for Defendant: John W. Suthers, Attorney General Maurice G. Knaizer, Deputy Attorney General (Atty. Reg. # 05264) Monica M. Marquez, Assistant Attorney General (Atty. Reg. #28950) Melody Mirbaba, Assistant Attorney General (Atty. Reg. #31242) 1525 Sherman Street, 5th floor Denver, CO 80203	

Exhibit B

A-770

12-13-06 09:24 FROM: ST. SERVE.

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JOINT MOTION FOR ENTRY OF MODIFIED STIPULATED PROTECTIVE ORDER	

Pursuant to the August 9, 2006 Order of this Court, the parties respectfully request that this Court enter the Modified Stipulated Protective Order attached hereto.

Dated: August 11, 2006Dated: August 11, 2006

By: s/ Alissa S. Hecht
 Alissa S. Hecht, Attorney for Plaintiffs

By: s/ Monica M. Marquez
 Monica M. Marquez, Attorney for
 Defendant Ginnette Davis, Colorado
 Secretary of State

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing JOINT MOTION FOR ENTRY OF MODIFIED STIPULATED PROTECTIVE ORDER was served via LexisNexis File & Serve, on this 11th day of August, 2006, addressed to:

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s/ Alissa S. Hecht by Elizabeth Anadale

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DISTRICT COURT, CITY AND COUNTY OF DENVER, STATE OF COLORADO City and County Building 1437 Bannock Street Denver, Colorado 80204	FILED Document CO Denver County District Court 2nd JD Filing Date: Aug 11 2006 5:52PM MDT Filing ID: 12061227 Review Clerk: Charmaine Bright
Plaintiffs: MYRIAH SULLIVAN CONROY <i>et al.</i> Defendants: GINETTE DENNIS <i>et al.</i>	▲ COURT USE ONLY ▲ Case Number: 06CV6072 Div: 1 Crm: 1
Attorneys for Plaintiffs: Paul F. Hultin (Atty. Reg. #0142) Andrew C.S. Eflaw (Atty. Reg. #29053) Michael T. Williams (Atty. Reg. #33172) Alissa S. Hecht (Atty. Reg. #36126) Andrew H. Myers (Atty. Reg. #34288) Ramona L. Lampley (Atty. Reg. #37288) Wheeler Trigg Kennedy LLP 1801 California Street, Suite 3600 Denver, CO 80202 Telephone: (303) 244-1800 Facsimile: (303) 244-1879 E-mail: hultin@wtklaw.com; efaw@wtklaw.com; williams@wtklaw.com; hecht@wtklaw.com; myers@wtklaw.com; lampley@wtklaw.com Lowell Finley (<i>Pro Hac Vice</i>) Law Offices of Lowell Finley 1604 Solano Avenue Berkeley, CA 94707-2109 Telephone: (510) 290-8823 Facsimile: (415) 723-7141 lfinley@wwc.com Attorneys for Defendant: John W. Suthers, Attorney General Maurice G. Knaizer, Deputy Attorney General* (Atty. Reg. #05264) Monica M. Marquez, Assistant Attorney General* (Atty. Reg. #28950) Melody Mirbaba, Assistant Attorney General* (Atty. Reg. #31242) 1525 Sherman Street, 5th floor Denver, CO 80203 Telephone: (303) 866-5380	

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MODIFIED STIPULATED PROTECTIVE ORDER	

Pursuant to this Court's order at the hearing on August 9, 2006, the Parties, by and through their attorneys, submit the following Modified Stipulated Protective Order ("Order"):

IT IS HEREBY AGREED AND STIPULATED by and between the Parties that the following terms and conditions shall govern the use and treatment of confidential information and security information produced by the parties in this litigation:

1. "Confidential Information," as used herein, means any information, in whatever form, that a party produces in connection with formal or informal discovery in this litigation that such party in good faith believes contains, reflects or concerns trade secrets or other proprietary information which, if disclosed to third parties, would likely cause injury or prejudice, including, but not limited to, test reports and results, proprietary business information, business plans, information relating to personnel matters, and financial and other sensitive proprietary information that is not publicly available. Confidential Information may not be used or disseminated except as provided in this Order. Confidential Information includes documents, as broadly defined, including, without limitation, computer and other electronically-stored, -generated or -transmitted matter, tangible things and deposition testimony and exhibits. Confidential Information includes all documents or information derived from Confidential Information, including excerpts, copies or summaries of Confidential Information. Confidential Information, as defined herein, does not include "Security Information," which is defined in Paragraph 2. Confidential Information also does not include source code, which will not be produced as part of this litigation until further Order of this Court.

2. "Security Information," as used herein, means any information related to the security of the electronic voting systems certified by the Colorado Secretary of State for use in Colorado elections. Specifically, "Security Information" includes, but is not limited to, source code; schematics; software and hardware specifications; database configurations; change documents; other software programming and engineering documents; instructions for security functions such as re-setting the electronic voting machines; documents containing use and format of encryption technology; and other similar information, the dissemination of which could compromise the security and proper functioning of the electronic voting systems. Such Security Information, shall be produced pursuant to conditions set forth below in Paragraph 5.

3. A party may, subject to the limitation set forth in Paragraph 1, designate any information, document, thing or testimony that it furnishes in connection with this litigation as Confidential Information, and therefore subject to the provisions of this Order. Documents that the party wishes to designate as confidential must be designated as Confidential Information by affixing the legend "CONFIDENTIAL" to each document (including each page of a multi-page document). Any document not specifically designated as "CONFIDENTIAL" will be deemed not confidential and will not be subject to the terms of this Protective Order. Deposition

testimony and/or exhibits may be designated Confidential Information or Security Information either by: (a) stating on the record of the deposition that such deposition, or portion thereof, or exhibit is confidential; or (b) stating in writing served upon counsel of record up to two (2) days after receipt of the deposition transcript that such deposition, or portion thereof, or exhibit is confidential. Any deposition testimony and/or exhibit not specifically designated as "CONFIDENTIAL" or Security Information pursuant to the provisions of these subsections (a) and (b) will be deemed not confidential or Security Information and will not be subject to the terms of this Order.

4. Materials designated as Confidential Information may only be copied, disclosed, discussed, or inspected, in whole or in part, for the purposes of this litigation and only by the following persons:

- a. The parties in this lawsuit;
- b. counsel who represent the parties in this litigation, and the personnel who are directly employed by the attorney for the purpose of assisting with, or working on, this action;
- c. any person who is to testify as a witness either at a deposition or court proceeding in this action for the purpose of assisting in his/her preparation;
- d. expert witnesses retained by the parties in this lawsuit; and
- e. the Court and its officers, including stenographic reporters engaged in such proceedings as are necessarily incidental to the preparation or trial of this lawsuit.

Confidential Information shall not be disclosed to any of the persons referred to in subparagraphs (c) and (d) until such persons have been provided with a copy of this Order and have agreed in writing to be bound thereto by execution of a written agreement to that effect. The written agreement shall be in the form of the Confidentiality Agreement attached hereto as Exhibit A. Except as provided in Paragraph 5(b), all such agreements shall be retained by Counsel and shall be subject to *in camera* review by the Court if good cause for review is demonstrated by opposing counsel.

5. Pursuant to this Court's order on August 10, 2006, the production of Security Information, as defined in Paragraph 2, shall occur only under the following conditions:

- a. Source code will not be produced as part of this litigation until further Order of this Court. Source code appearing in documents containing other discoverable information will be redacted from such documents. Documents consisting entirely of source code will be withheld from discovery.
- b. Documents that contain Security Information may be designated as Security Information by affixing the legend "ATTORNEYS' EYES ONLY" to each document (including each page of a multi-page document).

- c. Documents containing Security Information will be made available for inspection at the Colorado Attorney General's Office, 1525 Sherman Street, Denver, Colorado by arrangement of the Parties.
- d. Inspection of the documents containing Security Information shall be limited to Plaintiffs' attorneys and two designated experts. Plaintiffs presently have designated Doug Jones and Dan Wallach as their experts. However, if either or both of these designated experts is unavailable to inspect the documents, Plaintiffs shall designate other experts of similar background and qualification and shall notify counsel for Defendant of the identities and contact information for such individuals.
- e. Plaintiffs' attorneys and the two designated experts shall be permitted to bring only notepads and pens into the room where documents containing Security Information will be reviewed. Plaintiffs' attorneys and the two designated experts shall not bring cellphones, PDAs, cameras, laptops, recording devices, or any other similar electronic equipment with them into the reviewing room. A representative from the Attorney General's Office may be present when Plaintiffs' attorneys and the two designated experts enter and leave the reviewing room, and may be posted outside the room during the review, to ensure that the provisions of this paragraph are followed.
- f. Plaintiffs' attorneys and the two designated experts may take notes concerning the Security Information they review, but shall not remove any such documents, in whole or in part, from the reviewing room. Documents containing Security Information shall not be copied in whole or in part by electronic, manual, or any other means. A copy of Plaintiffs' experts' notes containing any factual information obtained from the review of the Security Information shall be filed under seal with the Court.
- g. Plaintiffs' attorneys and Plaintiffs' two designated experts shall not disclose or discuss their notes or any information or facts obtained from their review of the Security Information with anyone except each other. Security Information and any notes, facts or information obtained therefrom shall be used solely and exclusively for the purpose of this specific litigation and shall not be disclosed or discussed with any other person for any other purpose whatsoever. Plaintiffs' experts' notes (and any copies thereof except for the copy filed with the Court under Paragraph 5(f)) shall be destroyed within sixty (60) days after the termination of this action. Plaintiffs' counsel shall furnish to Defendant's counsel a certificate of compliance with this Paragraph 5(g).
- h. Plaintiffs' two designated experts shall not be permitted to inspect the Security Information until such persons have been provided with a copy of this Order and have agreed in writing to be bound thereto by execution of a written agreement to that effect. The written agreement shall be in the form of the Confidentiality Agreement attached hereto as Exhibit A. As set forth in the Confidentiality Agreement, Plaintiffs' two designated experts agree to subject themselves to the personal jurisdiction of the court in this matter for purposes of enforcing the terms of this Order. A copy of the agreements executed by Plaintiffs' two designated experts shall be provided to counsel for Defendant. The original executed

agreements shall be retained by Counsel and shall be subject to *in camera* review by the Court if good cause for review is demonstrated by opposing counsel.

6. Whenever a document designated as Confidential Information or Security Information, or the information contained therein, is to be referred to or disclosed in a deposition, meeting or other gathering, any party claiming confidentiality may exclude from the room any person who is not entitled under this Order to receive the Confidential Information or Security Information. Whenever a document designated as Confidential Information or Security Information, or the information contained therein, is to be referred to or disclosed in connection with any hearing or trial, any party claiming confidentiality may ask the Court to exclude any person who is not entitled under this Order to receive it to be removed for the duration of such discussion or testimony.

7. A party that intends to file with the Court pleadings or other papers containing or referring to Confidential Information or Security Information shall take all reasonable steps, as prescribed by the Court and its local rules, to have such matter filed under seal. The parties shall take such additional steps as are reasonably necessary to ensure that the papers or relevant portions, as the Court may order, shall be filed in sealed envelopes or other appropriate sealed containers, labeled with the caption of the case, a brief description of the contents, and a statement that the envelope or container is sealed pursuant to this Order.

8. Subject to the Colorado Rules of Evidence, Confidential or Security Information and/or testimony concerning Confidential or Security Information may be offered in evidence at trial or any court hearing upon reasonable written notice of the intention to do so. Any party may move the Court for an Order that the evidence be received *in camera* or under other conditions to prevent unnecessary disclosure. The Court will then determine whether the proffered evidence should continue to be treated as Confidential Information and, if so, what protection, if any, may be afforded to such evidence at trial.

9. Documents unintentionally produced without designation as "Confidential" or "Attorneys' Eyes Only" may be retroactively designated in the same manner and shall be treated appropriately from the date written notice of the designation is provided to the receiving party.

10. The terms of this Order are subject to modification, extension or limitation as may be hereinafter agreed to by the parties in writing or as ordered by the Court. Any modifications, extensions or limitations agreed to in writing by the parties shall be deemed effective pending approval by the Court.

11. A party may object to the designation of particular Confidential or Security Information by giving written notice to the party designating the disputed information. The written notice shall identify the precise pages and portions of each document that he believes are not properly designated as Confidential or Security Information, and the reason for his belief. If the parties can not resolve the objections within three (3) business days after the time the notice is received, the party objecting to the designation of the information as "Confidential" or "Security" may then file an appropriate motion requesting that the court determine whether the disputed information should be subject to the terms of this Order. If such a motion is filed, the disputed information shall be treated as "Confidential" or "Security" under the terms of this Order until the Court rules on the motion.

12. This Order has no effect upon, and shall not apply to, the parties' use of their own Confidential material or Security Information for any purpose.

13. Confidential Information shall be used solely and exclusively for the purpose of this specific litigation and for no other purpose.

14. Nothing in this Order shall be deemed to preclude any party from objecting to the production of documents it considers not subject to discovery on the basis of privilege or otherwise; nor shall it be deemed to preclude any party from seeking a court determination whether particular discovery materials withheld on the basis of privilege should be produced.

15. Upon termination of this action, all parties shall within sixty (60) days return to the producing party all materials marked Confidential (and any copies thereof) or destroy them. Counsel for each party shall furnish a certificate of compliance that all confidential materials produced to the party, as well as all summaries, excerpts or copies of such materials, have been returned or destroyed.

16. When any third party produces documents or gives testimony pursuant to a request from a party in this matter, such third party may designate their testimony or documents as "Confidential" pursuant to this Protective Order.

17. Nothing in this Order shall be deemed to preclude any party from seeking and obtaining, on an appropriate showing, a modification of this Order, including a request for additional or reduced protection with respect to the confidentiality of documents or information as that party may consider appropriate.

18. The parties stipulate that this Court shall retain jurisdiction over them and any person to whom Confidential Information or Security Information is disclosed to the extent necessary to enforce the terms of this Order.

DATED this ____ day of _____, 2006.

BY THE COURT:

District Court Judge

STIPULATED AND AGREED TO
BY MYRIAH CONROY, ET AL.:

STIPULATED AND AGREED TO
BY GINETTE DENNIS:

Dated: August 11, 2006

Dated: August 11, 2006

By: s/ Alissa S. Hecht
Alissa S. Hecht, Attorney for Plaintiffs

By: s/ Monica M. Marquez
Monica M. Marquez, Attorney for
Defendant Ginnette Davis, Colorado
Secretary of State

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DISTRICT COURT, CITY AND COUNTY OF DENVER, STATE OF COLORADO City and County Building 1437 Bannock Street Denver, Colorado 80204	
Plaintiffs: MYRIAH SULLIVAN CONROY <i>et al.</i> Defendants: GINETTE DENNIS <i>et al.</i>	▲ COURT USE ONLY ▲ Case Number: 06CV6072 Div: 1 Ctrm: 1
CONFIDENTIALITY AGREEMENT	

I have read the Modified Stipulated Protective Order ("Protective Order") concerning the confidentiality of information in the above-captioned litigation. I understand that the Protective Order is a Court order designed to preserve the confidentiality of certain Confidential and Security Information. I also understand that the Protective Order restricts the use, disclosure and retention of such Confidential and Security Information and also requires the safeguarding and return of documents and other materials containing Confidential or Security Information.

I agree to comply with all provisions of the Protective Order. I also hereby submit myself to the jurisdiction of the Court for the purpose of enforcement of any provision of the Protective Order.

Dated: _____

Signature_____
Name_____
Address

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JOHN W. SUTHERS
Attorney General

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Solicitor General

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DEPARTMENT OF LAW
OFFICE OF THE ATTORNEY GENERAL

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1525 Sherman Street - 7th Floor
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FROM: Maurice Knaizer
Deputy Attorney General
State Services Section

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Tab 33

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hearing would be required in order to determine whether or not Plaintiffs would be permitted to undertake the bulk of its requested discovery. ESS Motion of Dec. 6 at p.7. Indeed, ESS represented that “[h]aving the benefit of ESS’ experts, not just plaintiff’s experts, is critical to the court in a case such as this where the subject matter of the trade secret is highly technical and one in which the court is unlikely to be familiar.” *Id.* at pp.4-5.

After more than nine hours of testimony proffered during the resulting evidentiary hearing, ESS and the other Defendants have offered into evidence not a single fact, opinion, or indeed *witness* regarding the “highly technical nature” of ESS’s purported trade secrets. Indeed, the one witness ESS offered to the court was a professor of government, without any competence to testify as to the nature – “highly technical” or otherwise – of ESS’s trade secrets. Instead, Defendants engaged the Court in precisely the exercise that Plaintiffs vigorously argued was inappropriate when it was first suggested; namely, a premature mini-trial on the merits of the parties’ respective theories. ESS and the other Defendants ultimately had just one point to make: that they have an alternative theory to explain the 15% undervote rate that ESS’s iVotronic voting machines recorded for the 13th Congressional District race in Sarasota County. In the course of making this point, ESS demonstrated that their alternative theory (based on a statistical analysis that is not “highly technical” in any way) is (1) novel and never-before tested, (2) consistent with Plaintiffs’ theory of machine malfunctions, and (3) based on incomplete evidence.

ESS and the other Defendants may further pursue this theory, submit their expert to the discovery process, and ultimately present their theory at trial. What they may not

do, however, is use their theory to deny Plaintiffs the ability to conduct their own legitimate discovery. In fact, ESS has simply underscored the importance of careful examination of the voting machines in order to present to the Court evidence that helps explain why the Sarasota iVotronic machines – as ESS’s own expert now concedes – recorded anomalous results likely contrary to the intent of thousands of voters.

Plaintiffs respectfully urge the Court that it is time to allow this case to move forward.

II. Plaintiffs Have Demonstrated a Reasonable Necessity for Discovery.

As voters, the Plaintiffs here are the real parties in interest in this election contest. *See Boardman v. Esteve*, 323 So.2d 259, 263 (Fla. 1975) (“[T]he real parties in interest here, not in the legal sense but in realistic terms, are the voters. They are possessed of the ultimate interest and it is they whom we must give primary consideration.”). If the Plaintiffs were consumer victims who had lost thousands of dollars due to alleged computer error that lost or misattributed their funds, they would certainly be able to examine the computers to find out what went wrong. It is even more appropriate to allow discovery here when the Voter Plaintiffs seek not to protect their financial interests or to gain political power, but are protecting one of their most fundamental rights – the right to cast a vote and have it count.

It is axiomatic that Florida’s trade-secret privilege – here, the right of litigants to shield even legitimate trade secrets from disclosure during the discovery process – is not absolute. 8 Wigmore, Evidence § 2212(3) (McNaughton rev.1961); Law Revision Council Note to § 90.506 (1976). Rather, the “purpose of the [trade secret] privilege is to prohibit a party from using the duty of a witness to testify as a method of obtaining a

valuable trade secret *when the lack of disclosure will not jeopardize more important interests.*” Law Revision Council Note to § 90.506 (1976) (emphasis added). The privilege is statutorily limited and permits invocation only “if the allowance of the privilege will not conceal fraud or otherwise work injustice.” Fla. Sta. § 90.506 (2006). Critically, the “necessity of disclosure to the presentation of the opponent’s case” (among other factors) weighs against suspending the generally applicable discovery obligations. Law Revision Council Note to § 90.506 (1976).

With no party to the immediate consolidated case contesting trade secrecy status,² Plaintiffs need only demonstrate a “reasonable necessity” for such materials in order to trigger ESS’s disclosure obligations. *See, e.g., Goodyear Tire & Rubber Co. v. Cooley*, 359 So.2d 1200, 1202 (Fla. 1st DCA 1978). If the Court finds that Plaintiffs have demonstrated a reasonable necessity, the Court should require ESS to produce the materials in question to the Plaintiffs under an appropriate protective order. *See, e.g., Seta Corporation of Boca, Inc. v. Attorney General*, 756 So.2d 1093, 1094 (Fla. App. 4 2000) (“[C]ourts can order disclosure of trade secrets so long as protections are taken to see that they are not disclosed to competitors”).

Plaintiffs have clearly shown that the requested material is “reasonably necessary to resolve the issues in dispute.” *Virginia Elecs. and Lighting Corp. v. Koester*, 714 S.2d 1164, 1165 (Fla. 1st DCA 1998). As Professor Dan Wallach explained in his testimony, the information sought by Plaintiffs is crucial to the resolution of a central disputed issue

² For purposes of facilitating discovery, Voter Plaintiffs have conceded that ESS’s assertion that the materials that they have designated as trade secrets qualify as such and have further agreed to abide by any appropriate protective order the Court may find necessary to impose. Voter Plaintiffs reserve the right to challenge any such designation once discovery has commenced.

in this case: whether the malfunction of voting technology contributed to the Sarasota undervotes. Defendants could not offer a shred of evidence suggesting this information was not necessary – indeed, their own expert’s testimony acknowledging the anomalous results produced by the machines points to the importance of an independent examination of their operation. Simply put, details regarding the operation and accuracy of the voting technology approved by the state of Florida and selected by Sarasota County are the very essence of this case.

III. All Expert Testimony Supports Plaintiffs’ Need for Discovery.

The testimony of all three expert witnesses demonstrated Plaintiffs’ need for the information and materials for which ESS claims trade secret protection.

Professor Charles Stewart, whose expert qualifications regarding voting technology, residual votes, and statistical analysis are not challenged by the Defendants, testified that the “excess undervote rate” in the Sarasota Congressional race – the percentage of ballots without a candidate selection above and beyond what is considered normal – was 12%, amounting to approximately 14,000 votes. Prof. Stewart also found that it was likely that voting machine problems led to this excess undervote. Moreover, he testified that it is likely that this unexplained excess undervote led to a different outcome than that chosen by the voters. Prof. Stewart’s conclusions were based on, among other things, an analysis of precinct-level election returns from Sarasota County and other Florida counties as well as ballot images and event logs from Sarasota County iVotronic machines. Eliminating other theories such as voter error and intentional undervoting as likely causes of the undervote, Prof. Stewart concluded that the available data pointed to specific problems with iVotronic machines as the most likely explanation.

Professor Dan Wallach, a computer scientist whose expert qualifications regarding voting systems Defendants similarly do not challenge, testified that he would likely be able to prove or disprove a voting system malfunction theory within a reasonable degree of professional certainty only if he had access to the information and materials that ESS has designated as constituting or containing trade secrets. He testified that simply testing the voting machines – as opposed to testing the machines in conjunction with the source code and other related materials – could never disprove the existence of a software bug. He further testified that he would be unable to know precisely how his evaluation of the code would proceed until he was able to analyze it for likely sources of problems, although it was likely that he would be able to reach his conclusion within a matter of weeks. Prof. Wallach further described specific machine and non-machine theories that could explain the excess undervote rate witnessed with iVotronic machines in Sarasota County and how his investigation of these materials would likely allow him to prove or disprove those theories. Defendants introduced no evidence that contradicted Professor Wallach's testimony.

ESS's sole expert, Professor Michael Herron, a professor of government, was recognized by the Court as an expert in elections and voting patterns. He is not, as he conceded, an expert in computer science or voting systems. Professor Herron articulated an alternative theory focusing on ballot layout problems and voter confusion to explain the excess Sarasota undervotes. This theory, he testified, had never been used to evaluate the results of any previous election. Professor Herron also testified that he has only tested his theory using ballots cast on ESS voting machines; while he has requested ballot images created by machines from other manufacturers than ESS, he has of yet been

unable to acquire those ballot images for analysis. Based on the data and materials he *has* analyzed, Professor Herron testified that the outcome of the election would have been different had voters voted on machines with non-confusing ballot layouts such as the one used in Charlotte County. In addition, Professor Herron testified that while he believed that the “extraordinarily high undervote rates” in Sarasota County were caused by voter confusion resulting from a ballot format problem, no statistical analysis of observed voting data could distinguish between ballot format effects and engineering flaws that mimic those effects.

IV. Conclusion.

Defendants have conceded through expert testimony that the outcome of the election would have been different had Sarasota voters cast ballots on iVotronic machines with a different ballot style, that voting machine malfunctions could account for undervote rates that on the surface appear to be based on voter confusion, and that the evidentiary basis for their own alternative theory is incomplete. Nevertheless, Defendants continue to block Plaintiffs’ access to clearly relevant material. At the same time, Defendants offer theories that actually are compatible with those of the Plaintiffs and continue to follow a pattern of leveling inflammatory accusations – for which they provide no factual support – that do nothing more than slow these proceedings.³

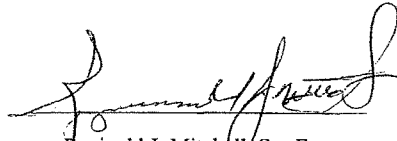
³ See, e.g., ESS’s Pre-Hearing Memorandum of Law of December 18, 2006 (charging Plaintiffs, counsel, and experts of having “well-defined political agendas” for which they are abusing the judicial process and in support of which they will disclose proprietary information to third parties); State Defendants’ First Set of Interrogatories to Each Fedder Plaintiff, Interrogatories #15 and #16, issued December 15, 2006 (insinuating that drug or alcohol use may have caused the extraordinarily high undervote rate in the Sarasota Congressional race and thus allegedly meriting intrusive discovery into the private lives of the Voter Plaintiffs); Transcript of December 8 Hearing at p. 40 (accusing Jennings expert Prof. Wallach of “mak[ing] a living on the lecture circuit trashing electronic voting

What was apparent before is even more so now: Plaintiffs have demonstrated a reasonable necessity for the materials sought in discovery, while ESS and other Defendants seek to hide behind a trade secret veil. Voter Plaintiffs and their experts are entitled to their requested discovery, discovery that can be protected by an appropriate protective order as the Court sees fit. Voter Plaintiffs respectfully request that their Motion to Compel be granted and that this case be permitted to proceed.

systems” and therefore having a pecuniary interest in “finding out what is in ES&S’s source code” when in fact Wallach testified (and Defendants introduced no evidence to contradict) that he makes “[i]f I’m lucky, a couple hundred bucks on honorariums.”

DATED this 22nd day of December, 2006.

Respectfully Submitted,


 Reginald J. Mitchell, Sr., Esq.

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Voter Plaintiff's Post Hearing Brief was furnished on the 22nd day of December, 2006, by facsimile to the following counsel of record:

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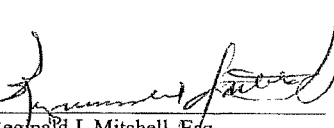
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Tab 34

**IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION**

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

Case No.: 2006 CA 2973

vs.

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA; SARASOTA COUNTY
CANVASSING BOARD; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE
STATE OF FLORIDA; DAWN K. ROBERTS, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; VERN BUCHANAN, as
nominee of the Republican Party for Representative in
Congress from the State of Florida's Thirteenth
Congressional District; and ELECTION SYSTEMS
& SOFTWARE, INC.,

Defendants.

ELLEN FEDDER, LANCE JONES,
ERNEST LASCHE a/k/a MIKE LASCHE,
BARBARA KLEIN, LOIS HARMES,
JOHN MINDER, DOVIE MURRAY,
JOHN MCBRIDE, SUSAN GAAR,
GARY LAMER, CHARLES CLIFTON,

Plaintiffs,

Case No.: 2006 CA 2996

vs.

TOM GALLAGHER, CHIEF
FINANCIAL OFFICER, *et al.*

Defendants.

PLAINTIFF JENNINGS' POST-HEARING BRIEF

During the two-day evidentiary hearing on the Plaintiffs' Motions to Compel and Motion for a Protective Order, the Court heard extensive testimony from three experts about what may have caused the extraordinary and aberrational undervote in the race for U.S. Representative from Florida's Thirteenth Congressional District. But cutting through all the testimony, tables, charts, and graphs, this is, at bottom, a simple discovery dispute on the limited issue of the trade-secrets privilege. And it is clear when considering this limited issue that the trade-secrets privilege does not bar Plaintiff from the discovery she seeks.

Under well-established trade-secrets law, (1) it is the Plaintiff's burden to show reasonable necessity for the requested trade secrets; (2) it is the Defendant's burden to show good cause for denying discovery of the requested trade secrets; and (3) it is the Court's duty to decide whether the "necessity for the production of the [trade secrets] outweighs the interest in maintaining their confidentiality." *Sheridan Healthcorp, Inc. v. Total Health Choice, Inc.*, 770 So. 2d 221, 223 (Fla. 3d DCA 2000). Under that test, Plaintiff should prevail here:

- First, Plaintiff has shown a reasonable necessity for the requested materials. Her complaint alleges that the pervasive malfunctioning of the iVotronic system caused the rejection of thousands of legal votes and thus changed the outcome of the election. It would be nonsensical to suggest that Plaintiff does not reasonably need access to the iVotronic system to prove the allegations of her complaint.
- Second, Defendants have presented literally *no evidence* showing that disclosure under an appropriate protective order would harm Defendant ES&S. Indeed, they

have raised no issue at all with respect to the adequacy of the protective order proposed by Plaintiff.

- Third, Plaintiff's reasonable necessity for the requested materials clearly outweighs Defendant ES&S's interest in preventing disclosure.

I. PLAINTIFF HAS SHOWN A REASONABLE NECESSITY FOR THE REQUESTED MATERIALS.

No one disagrees that something went very wrong in the congressional election in Florida's Thirteenth District. And no expert who testified before this Court disagrees that, had things not gone so very wrong, Christine Jennings would have won this election. The only point of disagreement is over *what* went wrong. Defendants allege that elderly voters were confused by the ballot design used in Sarasota County. Plaintiff alleges that there was a pervasive malfunction of the iVotronic system. *But it is Plaintiff who has brought this case, and Plaintiff is entitled to the materials she needs to prove her case.* Defendants are welcome to present their "blame the voters" theory at trial. But at this stage of the proceedings, that theory provides no basis for denying access to clearly relevant discovery materials.

At this stage of the proceedings, Plaintiff must show only a "reasonable necessity" for the requested materials. *See Freedom Newspapers, Inc. v. Egly*, 507 So. 2d 1180, 1184 (Fla. 2d DCA 1987) ("trade secret information may be released upon a showing of sufficient need for the information"). And the "level of necessity which must be shown is that the information is necessary for the movant to prepare [her] case for trial, including preparation of the movant's theories and the rebuttal of the opponent's theories." 1 MELVIN F. JAGER, TRADE SECRETS LAW § 5:33 (2006). This, Plaintiff has clearly shown. "Contrary to defendant's assertion, the information [Plaintiff] seeks is

neither irrelevant, nor immaterial to [her] case.” *Criswell v. Best Western Int’l, Inc.*, 636 So. 2d 562, 563 (Fla. 3d DCA 1994); *see also Pfeiffer v. K-Mart Corp.*, 106 F.R.D. 235, 236 (S.D. Fla. 1985) (holding that trade-secret information must be disclosed to plaintiff where it was “undoubtedly relevant” to the case). The testimony of Professors Charles Stewart and Dan Wallach demonstrates the relevance and materiality of the iVotronic system to Plaintiff’s case, and the testimony of Professor Michael Herron only amplifies Plaintiff’s need to examine and test the iVotronic system, including its hardware, software, and source code.

This hearing was not a trial on the merits. Nor was it a hearing on a motion for preliminary injunction, for which Plaintiff would be required to show a substantial likelihood of success on the merits. Rather, this evidentiary hearing focused on the limited issue of Plaintiff’s reasonable necessity for Defendants to produce trade-secret materials. The primary issue in this case is machine malfunction during the November 2006 general election. Plaintiff seeks access to the machines and their attendant hardware, software, and source code in order to make her case. It is entirely backwards for Defendants to suggest that Plaintiff must have compelling evidence to prove a specific theory *before* she has been provided access to the very evidence she needs to prove that theory.

A. Professor Stewart’s Testimony Shows that Plaintiff Has a Reasonable Necessity To Examine and Test the Requested Materials.

In support of her contention that examining and testing the iVotronic system is reasonably necessary, Plaintiff presented as her first witness Professor Charles Stewart, Chair of the Political Science Department at the Massachusetts Institute of Technology, who testified to the following facts:

1. There is a strong correlation between the date that an iVotronic machine was prepared for the election and the rate of undervote it exhibited during the election, as well as a strong correlation between the number of machines prepared on a given day and the rate of undervote: The later a machine was prepared, and the more machines prepared per day, the higher the undervote rate climbed.

2. Given that the most confusing ballot designs (such as the infamous “butterfly ballot” used in Palm Beach County in 2000) have caused rates of voter confusion of 5% or less, it is highly unlikely that the extraordinary 15% undervote rate on Sarasota County’s iVotronic machines can be explained solely by voter confusion.

3. Even if only 1,500 out of Sarasota County’s 18,000 undervotes in the congressional race are attributable to machine malfunction, Christine Jennings still would have won the election because Sarasota County was her political stronghold.

The testimony of Professor Stewart alone demonstrates that Plaintiff’s discovery requests are far from being a mere “fishing expedition.” *Freedom Newspapers*, 507 So. 2d at 1184.

B. Professor Wallach’s Testimony Shows that Plaintiff Has a Reasonable Necessity To Examine and Test the Requested Materials.

As her second witness, Plaintiff called Professor Dan Wallach of the Computer Science Department at Rice University. Professor Wallach testified extensively to what is already intuitive: To prove or disprove allegations of a malfunction in the iVotronic hardware and software, one needs access to the hardware and software that is alleged to have malfunctioned. This is not a case in which a plaintiff seeks a customer list or some

other material that may be tangential to the complaint's allegations. *Cf. Grooms v. Distinctive Cabinet Designs, Inc.*, 846 So. 2d 652, 655 (Fla. 2d DCA 2003). Rather, this is a case where access to the requested discovery is essential to proving the allegations. The primary issue in this case is machine malfunction. It is difficult to imagine how one could try a case about machine malfunction without access to the machines.

Indeed, as Professor Wallach testified, a fundamental precondition to discovering a software flaw is having access to the software in which such flaws might exist. Professor Wallach noted that there are already several strong candidates for where these software flaws might be discovered, such as:

1. A "bug" in the source code that causes a malfunction between where a person touched the screen and how that touch mapped to a particular candidate.
2. A "bug" in the source code that causes something to be lost in the transfer of data from volatile to non-volatile memory.
3. A "bug" in the source code that causes votes to be misrecorded when a county's election-definition files place too many candidates on a single screen.

And Professor Wallach further testified that his examination of the source code, conducted in conjunction with testing of the iVotronic machines, would take approximately two or three weeks.

Without access to the requested materials, Professor Wallach will not be in a position to provide the expert testimony that is crucial to Plaintiff's case. Florida courts have previously recognized that discovery must not be denied in these circumstances. *See Helmick v. McKinnon*, 657 So. 2d 1279, 1280 (Fla. 5th DCA 1995) ("[I]t is unlikely that [the party] will be able to offer an adequate expert opinion in his defense if the

requested materials are not furnished. Thus, he will not be able to make a sufficient proffer on appeal to show error below justifying a reversal for new trial. . . . Accordingly, we grant the petition for writ of certiorari, and quash the order denying discovery.”). It is therefore reasonably necessary that the requested materials be furnished to Plaintiff for her experts to examine and test.

C. Professor Herron’s Testimony Shows that Plaintiff Has a Reasonable Necessity To Examine and Test the Requested Materials.

Defendant ES&S apparently offered the testimony of Dartmouth College Professor Michael Herron regarding ballot-format effects in an attempt to dispute whether Plaintiff really needs the requested materials. In Professor Herron’s opinion, the malfunction in the November 2006 election was a voter malfunction, not a machine malfunction. Strikingly, Professor Herron acknowledged that he has no training or background whatsoever with respect to computer technology. But, in any event, his testimony as a political scientist actually underscores Plaintiff’s need for the requested materials.

First, Professor Herron testified that if Sarasota voters had voted using properly formatted touch-screens, Jennings would have won. Thus, Professor Herron’s testimony validates Plaintiff’s case that the number of votes affected is more than sufficient to change the results of the election. Moreover, as Professor Herron described, the “format” of the ballot in Sarasota County is, of course, a function of the election-definition files and software that Plaintiff seeks in this case. Indeed, as Plaintiff’s expert Professor Wallach testified, it is entirely possible that the machine malfunction in this case was caused by the interaction between the election-definition files prepared by the County and the source code written by ES&S.

Second, as Professor Herron testified and as he previously has written, “[n]o statistical analysis,” such as the one he conducted, is “capable of distinguish[ing] between ballot format effects and engineering flaws that mimic ballot format effects.” Michael C. Herron et al., *Ballot Formats, Touchscreens, and Undervotes: A Study of the 2006 Midterm Elections in Florida*, at 12 (Dec. 3, 2006) available at <http://www.dartmouth.edu/~herron/cd13.pdf>. To distinguish between these two hypotheses, as Professor Wallach repeatedly testified, one needs access to the engineering itself — the hardware, software, and source code of the iVotronic system.

Professor Herron’s testimony offered nothing to contradict Plaintiff’s evidence that examining and testing the iVotronic hardware, software, and source code are reasonably necessary to validate Plaintiff’s claim that machine malfunction caused the extraordinary undervote in this election.

D. The State’s Audit Shows that Plaintiff Has a Reasonable Necessity To Examine and Test the Requested Materials.

Defendants presented no witness with personal knowledge of the parallel testing conducted by the State as part of its audit following the November 2006 general election. Nonetheless, Defendants appear to believe that the results of the parallel test are sufficient to foreclose Plaintiff’s need for the requested discovery. That is absurd. When a patient sues a doctor for malpractice, the patient is not foreclosed from discovery directed at the doctor simply because the hospital has conducted an audit and cleared the doctor of any wrongdoing. The hospital has a powerful economic interest in clearing the name of a doctor to whom it has granted privileges, and a patient cannot be denied discovery based on the results of an investigation conducted by another interested party. This would be a dangerous precedent to set.

Moreover, the deficiencies of the “Parallel Test Summary Report” offered into evidence by Defendant (again, without any witness for Plaintiff to cross-examine) abundantly demonstrate the need for Plaintiff to conduct her own testing. The Report simply dismisses out of hand Plaintiff’s concerns about the unrepresentative demographics of the testers, the small sample size, the use of vertical rather than horizontal touch-screens, and the fact that the tests were conducted by employees of the very agency that certified the iVotronic system. And the Report fails to address one of the most basic problems with the test — the test “scripts” were written under the assumption that every undervote was an intentional undervote (which is why 206 of the 594 ballots in the State’s test exhibited a congressional undervote, a rate of nearly 35%). Most basically, however, the fact that one of the Defendants has already conducted its own testing cannot form the basis for denying Plaintiff the ability to do the same. Conclusions drawn by a defendant can never negate a plaintiff’s reasonable necessity for discovery.

II. DEFENDANTS HAVE PRESENTED NO EVIDENCE THAT DISCLOSURE WOULD HARM ES&S.

Although Plaintiff bears the burden of showing reasonable necessity for the requested discovery, “the burden is on the party resisting discovery [of trade secrets] to show ‘good cause’ for protecting or limiting discovery by demonstrating that . . . disclosure may be harmful.” *American Express Travel Related Servs., Inc. v. Cruz*, 761 So. 2d 1206, 1209 (Fla. 4th DCA 2000). It is critical to note that in the trade-secrets context, “[t]he relevant inquiry with respect to injury is not with respect to the harm caused by a public disclosure. Rather, the injury must be measured with respect to the disclosure under an appropriate protective order.” 1 MELVIN F. JAGER, TRADE SECRETS

LAW § 5:33 (2006). Here, Plaintiff has proposed an appropriate protective order and Defendants have offered no objection to the terms of that order.

Defendants have made no affirmative showing of good cause to prevent discovery of the requested materials. *See Travelers Indemnity Co. v. Hill*, 388 So. 2d 648, 650 (Fla. 5th DCA 1980) (holding that “trial court has the right to deny discovery upon a showing of good cause; but this requires an affirmative showing of good cause by the party or person seeking to prevent the discovery”). After leveling factual allegations in its pre-hearing “Memorandum of Law,” ES&S put on absolutely *no evidence* showing that disclosure of the requested discovery materials under the proposed Protective Order would cause ES&S any commercial harm. Nor did ES&S demonstrate any possibility of harm to the security of voting systems in Florida or elsewhere. This was ES&S’s burden to bear, and they did not meet it, presumably because they could not.

1. There is no danger of commercial harm to ES&S. Neither Plaintiff nor her experts are commercial competitors to ES&S. *See Seta Corp. of Boca, Inc. v. Office of Attorney General*, 756 So. 2d 1093, 1094 (Fla. 4th DCA 2000) (ordering production of material that a party claimed was protected by the trade-secrets privilege because the court found it “significant in this case that it is the State of Florida, not a competitor, who is seeking this information”); *Freedom Newspapers*, 507 So. 2d at 1184 (“The likelihood of [any] abuse of the discovery process is lessened where, as here, the party seeking discovery appears to have no real interest in the business techniques of the [party invoking the trade-secrets privilege].”).

2. There is no danger of harm to the security of the voting systems in Sarasota County or elsewhere. Indeed, the Sarasota County Supervisor of Elections, who

is a Defendant in this case, has recently stated that “she wants the source code released, because it would vindicate the machines and provide resolution for the candidates, voters, and her office.” Jennifer Liberto & Will Van Sant, *Suit Asks To See Inside Vote Machine*, ST. PETERSBURG TIMES (Dec. 20, 2006).¹

3. Any fear of harm from releasing the source code to persons who have criticized electronic voting systems in the past has no place in an argument about the applicability of the trade-secrets privilege. The privilege is meant to protect a company’s intellectual property, not its reputation. The reputation of ES&S will rise or fall based upon an examination of what really happened in this election, not from release of its trade secrets. And as a corporate citizen entrusted with manufacturing the voting technology used by millions of people in Florida, ES&S should want this examination as much as anyone. A company confident in its own technology would welcome the scrutiny, not hide from it.

III. THE BALANCE HEAVILY FAVORS DISCLOSURE TO PLAINTIFF UNDER A PROTECTIVE ORDER.

“[I]n each case the trial judge must weigh the importance of protecting the claimant’s secret against the interest in facilitating the trial and promoting a just end to the litigation.” CHARLES W. EHRHARDT, EVIDENCE § 506.1 (2006). Here, access to the iVotronic hardware, software, and source code would undeniably facilitate the trial in this case and promote a just end to the litigation. Because the iVotronic system does not produce tangible evidence of the voter’s choice that can be examined in a contest

¹ In response to the concerns raised by the Sarasota County Supervisor of Elections’ Post-Hearing Brief, Plaintiff would suggest that the Court’s Order require Plaintiffs (1) to provide compensation, reimbursement, or financial security to the Sarasota County Supervisor of Elections for the requested hardware and equipment at market rate, not to exceed \$2,950 for each iVotronic machine, and (2) to return all equipment, hardware, and software within 60 days after the final termination of litigation between the parties, including this action and all other proceedings related to the November 2006 general election.

proceeding, there clearly is a reasonable necessity to examine the source code to determine whether a malfunction affected enough legal votes to swing the election.

When weighing Plaintiff's interest in facilitating the trial and promoting a just end to the litigation, on the one hand, against Defendant's interest in keeping its secrets, on the other hand, it is critical to remember that the context here is an election for public office. Accordingly, it must be noted that "the real parties in interest here, not in a legal sense, but in realistic terms, are the voters." *Boardman v. Esteva*, 373 So.2d 259, 263 (Fla. 1975). And despite Professor Herron's statements to the contrary, figuring out what went so very wrong in this election is not simply an academic exercise. See Hr'g Tr. at 123 (Dec. 20, 2006, rough draft) (characterizing the election as a "very nice test of our theory"). Figuring out what went so very wrong in this election is a matter of great importance not only to the litigants here, but to voters throughout the Thirteenth Congressional District.

CONCLUSION

Plaintiff's evidence that there is a reasonable necessity to examine the iVotronic hardware, software, and source code in order to determine whether the iVotronic system malfunctioned is entirely uncontradicted. Plaintiff's evidence that her experts would steadfastly abide by any protective order imposed by this Court is similarly uncontradicted. Plaintiff's proposed Protective Order is unobjectionable and, in fact, Defendants have offered no objection to its terms. Nor have Defendants offered any evidence of harm from disclosure pursuant to the Protective Order.

For the foregoing reasons, the Court should enter the attached Proposed Order.

Respectfully submitted this 22nd day of December, 2006 by:


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A-805

Tab 35

IN THE CIRCUIT COURT OF THE
SECOND JUDICIAL CIRCUIT, IN AND
FOR LEON COUNTY, FLORIDA,

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

vs

CASE NO. 2006-CA-2973

ELECTIONS CANVASSING COMMISSION
OF THE STATE OF FLORIDA; SARASOTA
COUNTY CANVASSING BOARD; KATHY
DENT, as Sarasota County Supervisor of
Elections; SUE M. COBB, as Secretary of State
of the State of Florida; DAWN K. ROBERTS,
as Director of the Division of Elections of the
State of Florida; VERN BUCHANAN, as
nominee of the Republican Party for
Representative in Congress from the State of
Florida's Thirteenth Congressional District;
and ELECTION SYSTEMS & SOFTWARE, INC.,

Defendants.

ELLEN FEDDER, LANCE JONES, ERNEST LASCHE,
a/k/a MIKE LASCHE, BARBARA KLEIN, LOIS
HARMES, JOHN MINDER, DOVIE MURRAY,
JOHN McBRIDE, SUSAN GAAR, GARY LAMER
and CHARLES CLIFTON,

CASE NO. 2006-CA-2996

Plaintiffs,

vs

TOM GALLAGHER, Chief Financial Officer, State of Florida, GOVERNOR JEB BUSH, and State Senator DAN WEBSTER, as members of and as the FLORIDA ELECTIONS CANVASSING COMMISSION; and SUE M. COBB, as Secretary of State, State of Florida; et al.,

Defendants.

ORDER ON MOTIONS

This cause came on for hearing on the Motions To Compel filed by Plaintiff, Christine Jennings, and Plaintiffs, Ellen Fedder, Lance Jones, Ernest Lasche, a/k/a Mike Lasche, Barbara Klein, Lois Harmes, John Minder, Dovie Murray, John McBride, Susan Gaar, Gary Lamer, and Charles Clifton, and the Motion For Entry of a Protective Order filed by Plaintiff, Christine Jennings. The Court having considered the evidence presented, the record, argument of counsel, and being otherwise fully advised finds as follows:

- A. All parties agree for the purposes of the motions that the Source Code and Proprietary Technology associated therewith constitutes a trade secret.
- B. The sole issue for determination is whether or not Plaintiffs can demonstrate a reasonable necessity to gain access to the trade secret.
- C. Plaintiffs allege that there was some 18,412 undervotes in the race for The United States House of Representatives in Florida's Thirteenth Congressional District in Sarasota County, or 12.9% of the votes cast in said county, and that such a large number

demonstrates a malfunctioning of the iVotronic system which rejected thousands of legal votes.

D. The machines now challenged were tested as required by law prior to the early voting and election day voting and were found to be working properly.

E. Because the election was a close one and due to Plaintiffs' allegations an audit was conducted on the voting system to verify its accuracy.

F. Two parallel tests were conducted on the subject screen systems and representatives of both Plaintiffs and Defendants were present. The test results revealed 100% accuracy of the equipment in reporting the vote selections.

G. Plaintiffs have presented no evidence to demonstrate that the parallel testing was flawed and/or the results not valid.

H. The testimony of Plaintiffs' experts was nothing more than conjecture and not supported by credible evidence.

I. For this Court to grant Plaintiffs' motions would require this Court to find that it is reasonably necessary for the Plaintiffs to have access to the trade secrets of Defendant, Election Systems & Software, Inc., based on nothing more than speculation and conjecture, and would result in destroying or at least gutting the protections afforded those who own the trade secrets.


Accordingly, it is

ORDERED AND ADJUDGED as follows:

1. The Motion To Compel filed by Plaintiff, Christine Jennings, is Denied.
2. The Motion To Compel filed by Plaintiffs, Ellen Fedder, Lance Jones, Ernest Lasche, a/k/a Mike Lasche, Barbra Klein, Lois Harmes, John Minder, Dovie Murray, John McBride, Susan Gaar, Gary Lamer, and Charles Clifton, is Denied.
3. The Motion For Entry of a Protective Order filed by Plaintiff, Christine Jennings, is moot, and thus Denied.

DONE AND ORDERED in Chambers at Tallahassee, Leon County, Florida, this

29th day of December, 2006.


WILLIAM L. GARY
Circuit Judge

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IN THE DISTRICT COURT OF APPEAL
FIRST DISTRICT OF FLORIDA
CASE NO. _____
LT NO. 2006 CA 2973

CHRISTINE JENNINGS, as nominee of the Democratic Party
for Representative in Congress from the State of Florida's
Thirteenth Congressional District,

Petitioner,

v.

ELECTIONS CANVASSING COMMISSION OF THE STATE OF FLORIDA;
SARASOTA COUNTY CANVASSING BOARD;
KATHY DENT, as SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
SUE M. COBB, as SECRETARY OF STATE OF THE STATE OF FLORIDA;
DAWN K. ROBERTS, as DIRECTOR OF THE DIVISION OF ELECTIONS
OF THE STATE OF FLORIDA;
VERN BUCHANAN, as nominee of the Republican Party for Representative in Congress
from the State of Florida's Thirteenth Congressional District; and
ELECTION SYSTEMS & SOFTWARE, INC.,

Respondents.

EMERGENCY MOTION TO EXPEDITE PETITION FOR A WRIT OF CERTIORARI

On Petition for a Writ of Certiorari to the Circuit Court of the Second Judicial Circuit,
in and for Leon County
Honorable William L. Gary

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**EMERGENCY MOTION TO EXPEDITE
PETITION FOR A WRIT OF CERTIORARI**

Petitioner Christine Jennings respectfully requests that this Court expedite proceedings in this matter and states:

1. The question presented in this emergency petition for a writ of certiorari is whether the trial court departed from the essential requirements of law by denying Petitioner's motions to compel production of certain discovery critical to proving Petitioner's case that the iVotronic electronic voting system used by Sarasota County during the November 2006 general election caused the rejection of thousands of legal votes, resulting in the "election" of the candidate who was the voters' second choice for United States Representative from Florida's Thirteenth Congressional District.

2. The trial court relied on the trade-secrets privilege in denying Petitioner's motions for production of components of the iVotronic voting system, but applied the wrong legal standard to Petitioner's burden, ignored that Respondents did not meet their burden, and failed to perform the required balancing of interests. The court simply concluded, based on absolutely no evidence presented by the manufacturer of the iVotronic system, Election Systems & Software, Inc. ("ES&S"), that granting Petitioner's motions "would result in

destroying or at least gutting the protections afforded those who own the trade secrets” of the iVotronic voting system. Order on Motions at 3 (Dec. 29, 2006).

3. Because this case involves voting technology that will be used by more than 40% of Florida’s voters in upcoming elections, this is a case of great urgency and importance not only to the voters of Florida’s Thirteenth Congressional District, but to voters statewide. “[T]he much larger issue in Florida and nationwide is how to identify the problems that make voting technology unstable enough to undermine confidence in our electoral system. That needs to be addressed and rectified — and certainly before another presidential election rolls around.” Editorial, *E-Glitch: Sarasota Mess Creates a Test Case*, TALLAHASSEE DEMOCRAT, Dec. 17, 2006. Its timely resolution is therefore critical.¹

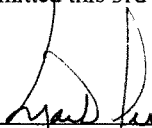
¹ See also Editorial, *District 13: Wrong Ruling*, PALM BEACH POST, Jan. 3, 2007 (“The public needs the courts to err on the side of voters, not trade secrets.”); Editorial, *Finding the Source: Unanswered Questions in the Sarasota Voting Case*, WASH. POST, Jan. 2, 2007, at A16 (“More than a winning commercial formula is at stake here. Hopefully the appeals court will see that the public good would be well served by getting to the bottom of this case.”); Editorial, *Question for Florida: Are 18,000 Votes Missing in Sarasota?*, DAYTONA BEACH NEWS-JOURNAL, Dec. 21, 2006 (“What’s more important to you: Knowing that your vote is counted, or knowing that the company that sold the county voting machines is able to keep its trade secrets private? For most voters, the answer is easy.”); Editorial, *Checking the Vote: Another Disputed Florida Race Points Up the Need for a Paper Trail*, WASH. POST, Dec. 2, 2006 (“It’s important that these questions be answered, not just to determine the outcome of this race but to maintain the integrity of voting for contests where more than one congressional district court be at stake.”).

4. The term of office Petitioner is seeking begins on January 4, 2007 and ends just twenty-four months later. The election-contest statute under which Petitioner is proceeding in the trial court expressly calls for expedited proceedings. See Section 102.168, Florida Statutes. And Florida courts have previously recognized the importance of expedited proceedings when a term of public office is at stake. See, e.g., *Palm Beach Cty. Canvassing Bd. v. Harris*, 772 So. 2d 1273, 1280 (Fla. 2000).

5. The voters of Florida's Thirteenth Congressional District are entitled to know as soon as possible whether Sarasota County's iVotronic system rejected thousands of legal votes cast for Christine Jennings and resulted in their being represented in Congress by a candidate who was not their choice. The answer to that question cannot be ascertained until Petitioner receives the discovery she is seeking.

WHEREFORE, Petitioner respectfully moves this Court to expedite these proceedings so that this case may be adjudicated as soon as possible.

Respectfully submitted this 3rd day of January, 2007:



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I HEREBY CERTIFY that a copy of this motion was furnished to the following by United States Mail, this 3rd day of January, 2007:

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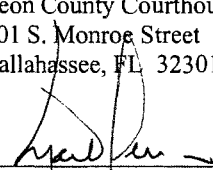
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January 4, 2007

Mr. Jon S. Wheeler
Clerk of the Court
Florida First District Court of Appeal
301 S. Martin Luther King Blvd.
Tallahassee, FL 32399-1850

Re: *Christine Jennings v. Elections Canvassing Commission*, Case No. 1D07-11

Dear Mr. Wheeler:

I am writing in relation to the pending case, *Christine Jennings v. Elections Canvassing Commission*, Case No. 1D07-11, and ask that this letter be filed with the Court in connection with that proceeding.

The House of Representatives has received a Notice of Contest from Christine Jennings, preserving her right to contest in the House, the certified results of Florida's 13th Congressional District election, as she is now doing under Florida law. The responsibility for evaluating any House contest falls to the House Administration Committee, which I chair. As a result, my Committee is closely following the course of the litigation now underway in Florida.

In contested House elections, the House customarily relies on state legal processes to provide a full and fair airing of contested election issues raised by the parties. This allows states the opportunity to fully discharge their Constitutional responsibility to conduct Federal elections. These state proceedings ordinarily enhance the ability of the House to evaluate the merits of any pending election contest. See *Roudebush v. Hartke*, 405 U.S. 15, 92 S.Ct. 804 (1972).

It is therefore of concern that the parties have been unable to agree upon, and that, on December 29th, the lower court declined to order, the requested access to the hardware and software (including the source code) needed to test the contestant's central claim: voting machine malfunction. Now on appeal to your Court is the question of access to this evidence, which bears decisively on the


prospect of conclusively establishing who was duly elected on November 7th from this Congressional district.

My purpose here is not to express a position about the technical merits of the competing legal arguments in this evidentiary dispute. My purpose is to point out that, in evaluating an election contest in the House, the House is well served in its own deliberations by having before it a complete record. Consequently, Florida law will facilitate the evaluation of the election contest pending before the House to the extent that it provides access to relevant and critical evidence. I am confident that this can be done in a way that accommodates the valid interests of the parties, and resolution of these issues may obviate the need for the House to address them.

This election contest is, of course, a case of national importance, brought before the Court at a time of serious and mounting concern about the reliability of paperless electronic voting equipment. I am aware that the voters of Sarasota County expressed their doubts on November 7th, when they approved a requirement for voter verified paper balloting and mandatory audits.

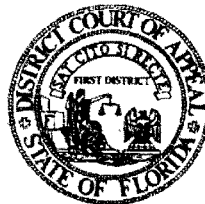
Against this background, I am particularly concerned that the public, in Florida and nation-wide, have full confidence that the questions raised by this contest are resolved after consideration of all relevant evidence. It is with this public interest in mind, and also with due consideration for the State's and the House's proper performance of their respective constitutional duties, that I respectfully submit these views to the Court for its consideration.

Sincerely,



Juanita Millender-McDonald
Chairwoman

Cc: See attached Certificate of Service



CASE NO.: 1D07-11
L.T. No. : 2006 CA 2973

Elections Canvassing
Commission Etc., Et Al.

Appellee / Respondent(s).

Petitioner Jennings' motion to expedite, filed January 3, 2007, is granted, and this proceeding shall be afforded expedited consideration by the court. Petitioner Fedder's motion to expedite, filed January 8, 2007, is denied as moot in light of the foregoing.

Respondent Election Systems and Software, Inc.'s motion to strike the emergency petition for writ of certiorari, filed January 5, 2007, and motion to strike the joinder to emergency petition for writ of certiorari and motion to expedite, filed January 10, 2007, are denied.

The relief requested in petitioner's emergency motion for clarification, filed January 22, 2007, is denied. See Fla. R. App. P. 9.300(b).

On the court's own motion, the order of January 4, 2007, is hereby clarified to reflect that any responses filed pursuant thereto shall address both the emergency petition for writ of certiorari and the joinder thereto.

I HEREBY CERTIFY that the foregoing is (a true copy of) the original court order.

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Randall C. Marshall	Judith E. Schaeffer	Donald B. Verrilli, Jr.

1465

IN THE FIRST DISTRICT COURT OF APPEAL
STATE OF FLORIDA

Case No. 1D07-11

CHRISTINE JENNINGS, ET AL.,

Appellants/Petitioners,

v.

ELECTION CANVASSING COMMISSION, ET AL.,

Appellees/Respondents.

RESPONSE OF CONGRESSMAN VERN BUCHANAN
TO PETITIONS FOR WRIT OF CERTIORARI

On Petitions for Writ of Certiorari to the Circuit Court of the
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PRELIMINARY STATEMENT

Before this court is a very narrow issue: whether petitioners met their burden of proving reasonable necessity to obtain what all parties agree is trade secret information of respondent Election Systems & Software, Inc. ("ES&S"). The trade secret petitioners seek is ES&S's source code for the iVotronic touchscreen voting machines used by Sarasota County in the 2006 general election. Petitioners' claimed need for the source code is based upon their allegations in the underlying election contest that a machine malfunction caused the rejection of a number of legal votes for Ms. Jennings sufficient to change or place in doubt the result of the election for United States Representative for the 13th Congressional District of Florida.

Upon petitioners' motions to compel production of the trade secret source code, the trial court held an evidentiary hearing to determine whether petitioners could demonstrate reasonable necessity to gain access to the protected materials. During the two day evidentiary hearing the trial court heard and weighed testimony from three expert witnesses and considered some 18 exhibits admitted into evidence. Two of those experts and 10 of those exhibits were offered by Ms. Jennings in support of her claim of reasonable necessity. After evaluating all of the evidence and the post-hearing briefs of the parties the trial court concluded that the "testimony of [Ms. Jennings'] experts was nothing more than conjecture and

not supported by credible evidence.” The trial court found that “the machines now challenged were tested as required by law prior to the early voting and election day voting and were found to be working properly.” The trial court also held that the State of Florida’s post-election parallel testing of the iVotronic machines demonstrated “100% accuracy of the equipment in reporting the vote selections” and that Ms. Jennings presented “no evidence to demonstrate that parallel testing was flawed and/or the test not valid.”

The trial court concluded that petitioners’ claim of reasonable necessity for the source code was based on nothing more than “conjecture and speculation” and held that the petitioners failed to satisfy their burden of demonstrating reasonable necessity so as to outweigh ES&S’ statutory trade secret protection. In doing so the trial court denied petitioners’ motions to compel. Petitioners appeal from that order denying their motions to compel.

STATEMENT OF FACTS

General Background

Christine Jennings lost the 2006 general election to the United States House of Representatives for the 13th Congressional District of Florida to respondent Congressman Vern Buchanan by 369 votes. (A:532).¹ As a result, petitioners filed the election contest below pursuant to section 102.168(c)(3), Florida Statutes, claiming the rejection of a number of legal votes for Ms. Jennings sufficient to change or place in doubt the result of the election. (A:206).² Petitioners seek to overturn the certified results of the election based upon the claim that legal votes cast for Ms. Jennings were “lost” and not counted because of “pervasive malfunctioning of electronic voting machines.” (A:206-07, 527). Specifically, petitioners claim that a software “bug” induced the alleged malfunction which in turn caused an abnormally high rate of undervotes to be reported among the election returns for the 13th Congressional District race in Sarasota County. (A:532, 569, 807-08).³ Ms. Jennings claims that “there is little doubt” that the use

¹ Citations to the Appendix to Jennings’ Petition for an Emergency Writ of Certiorari are cited by “A” followed by the page number.

² Ms. Jennings is joined in this petition by plaintiffs in the case *Fedder, et al. v. Gallagher, et al.*, 2006 CA 2996 (A:181), another election contest that was consolidated with the Ms. Jennings’ suit. (A:204). The Fedder plaintiffs assert claims under section 102.168(3)(a) and (3)(c), Florida Statutes.

³ “‘Undervote’ means that the elector does not properly designate any choice for an office or ballot question and the tabulator records no vote for the office or

of the iVotronic machines in Sarasota County caused the high rate of “excess” undervotes in the race. (A:214). Ms. Jennings claims that, if the excess undervotes had been properly recorded and counted as legal votes for Ms. Jennings, she would have won the election. (A:208).

Petitioners filed motions to compel production of the source code to the iVotronic machines and other proprietary technology related to the system which all parties agree is trade secret information. (A:807).⁴ The trial court held an evidentiary hearing on the motions on December 19 and 20, 2006. The trial court issued its order denying the motions on December 29, 2006. (A:806).

The Evidentiary Hearing and Trial Court’s Order

All parties stipulated to the trade secret status of ES&S’ source code and proprietary technology; thus, the only issue before the trial court at the evidentiary hearing was whether petitioners could demonstrate “reasonable necessity” to gain access to ES&S’s trade secrets. (A:807). To show reasonable necessity, Jennings introduced the testimony of two experts: Charles Stewart II, a political science

question.” § 97.021(37), Fla. Stat. (2006) (emphasis added). With respect to the iVotronic System, the word “undervote” on the ballot image for the effected race demonstrates a “clear indication that the voter made a definite choice to undervote” See Fla. Admin. Code R. 1S-2.031(4)2.a.

⁴ As described by Ms. Jennings’ counsel, “source code is programming statements and instructions written by a programmer, which, when converted into machine readable language, tells the computer what to do in a certain situation or in a myriad of situations.” (A:525).

professor at the Massachusetts Institute of Technology (A:530-555), and Dan Wallach, a computer science professor at Rice University (A:556-565, 584-603). In addition to the expert testimony, Jennings entered 10 exhibits into evidence. (A:567-582).

Mr. Stewart testified as to his statistical analysis of the election results. He opined that an excess number of undervotes was caused by the use of the iVotronic machines and that Ms. Jennings would have won the election if those excess undervotes were statistically “reallocated” as legal votes for the two candidates. (A:534). Exhibits 1 through 9 generally consist of charts prepared by Mr. Stewart that relate to his theory that “excess undervotes” in the District 13 race were caused by the use of iVotronic voting machines in Sarasota County. (A:579-580). Mr. Wallach testified regarding five hypotheses of potential causes of the undervotes, including the hypothesis relied upon petitioners that the excess undervotes could have been due to a software “bug.” Mr. Wallach further testified, generally, that “without source code we would be unable to rule out the software bug hypothesis.” (*See, e.g.*, A:563). Exhibit 10 is a computer program written by Mr. Wallach for the purpose of demonstrating how software can contain a “bug.” (A:560-61).

ES&S introduced Exhibits 1 through 7 into evidence which, among other things, included: the certification by the Florida Department of State, Division of

Elections, that the iVotronic software had been successfully tested and certified prior to the November 2006 election pursuant to section 101.015, Florida Statutes (A:643-47); the Sarasota County Canvassing Board's public notice of the October 20, 2006 public pre-election "logic and accuracy testing" of the voting machines pursuant to section 101.5612(1), Florida Statutes (A:648-49); the Sarasota Canvassing Board's October 20, 2006 certificate of correctness of testing, including testing for undervotes (A:650-51); the Florida Department of State's post-election parallel test report, dated December 18, 2006, showing that the machines performed with 100% accuracy in recording the vote selections as presented to voters on the summary screens (A:652-660). ES&S also entered into evidence the testimony of Michael Herron, a political science professor at Dartmouth College. (A:604-637). Mr. Herron testified about his alternative theory of a potential cause of the undervotes, one not involving machine malfunction. *Id.*

After considering all of the evidence and post-hearing briefing, the trial court entered an order outlining its findings and concluding that petitioners did not meet their burden of demonstrating reasonable necessity. Specifically, the trial court found that the "testimony of [Jennings'] experts was nothing more than conjecture and not supported by credible evidence." (A:808). The trial court also considered evidence of the voting machines' operations, including the results of pre- and post-election testing and certification conducted by the State of Florida

and Sarasota County. With respect to the pre-election testing and certification, the court held that “the machines now challenged were tested as required by law prior to the early voting and election day voting and were found to be working properly.” (A:808). Similarly, the court held that the State’s post-election “parallel testing” demonstrated “100% accuracy of the equipment in reporting the vote selections” and that Ms. Jennings presented “no evidence to demonstrate that parallel testing was flawed and/or the test not valid.” *Id.* The trial court denied the motions to compel disclosure of the trade secret material because petitioners’ claimed need of access was “based on nothing more than speculation and conjecture, and would result in destroying or at least gutting the protections afforded those who own the trade secrets.” *Id.*

SUMMARY OF ARGUMENT

The extraordinary remedy of certiorari review of a non-final discovery order is not appropriate where, as here, the trial court adhered to the essential requirements of law. The trial court appropriately applied well-established principles of law in denying the motion to compel because petitioners clearly failed to meet their burden of establishing a valid basis for obtaining access to the trade secrets. Petitioners’ claimed need for access to the protected materials consisted of nothing more than expert hypotheses based upon speculation, conjecture, and the assumption that the voting machines malfunctioned. In the end, their proffer of

reasonable necessity was based solely upon the unsupported claim that review of the source code was necessary to rule out the existence of a software bug. The mere claimed need of access to trade secrets is not sufficient under Florida law to establish reasonable necessity such that disclosure of the materials will be compelled.

ES&S, on the other hand, introduced direct, uncontroverted factual evidence that the machines were tested and certified by state and county elections officials on multiple occasions and that they functioned properly and recorded vote selections with 100% accuracy. The trial court adhered to the essential requirements of Florida law in weighing the competing interests of the parties and in determining that petitioners did not make a showing of reasonable necessity for the trade secrets so as to outweigh ES&S' statutory protections. Accordingly, the petition should be denied.

Petitioners are required to demonstrate that the order below created a material injury that cannot be remedied on direct appeal. They have failed to do so. Time, expense or trouble in adjudicating a matter do not constitute material injury sufficient to invoke the extraordinary relief of certiorari review. Any conceivable injury resulting from such order can be remedied on direct appeal. Petitioners' failure to demonstrate a material injury that cannot be remedied on

direct appeal creates a jurisdictional defect precluding this court from issuing the extraordinary relief sought. For this reason, too, the petition should be denied.

ARGUMENT

I. Petitioners fail to establish entitlement to a writ of certiorari.

Standard of Review

Certiorari is an extraordinary remedy that should not be used to circumvent non-final orders not reviewable under Rule 9.130, Florida Appellate Rules of Procedure. *Martin-Johnson, Inc. v. Savage*, 509 So. 2d 1097, 1099 (Fla. 1987). The standard of review for a non-final order not reviewable under Rule 9.130, such as an order pertaining to discovery, is whether the order departs from the essential requirements of law resulting in a material injury which cannot remedied on direct appeal. *Martin-Johnson*, 509 So. 2d at 1099; *Allstate Ins. Co. v. Langston*, 655 So. 2d 91, 94 (Fla. 1995); *S.Y. v. McMillan*, 563 So. 2d 807, 809 (Fla. 1st DCA 1990). The court, on certiorari review, is to ascertain whether supporting evidence is totally lacking for the ruling in question; it cannot, however, reweigh or reevaluate the evidence. *Dade County v. Marca*, 326 So. 2d 183, 184 (Fla. 1976) (*quoting DeGroot v. Sheffield*, 95 So. 2d 912, 916 (Fla. 1957)); *Dresner v. City of Tallahassee*, 164 So. 2d 208, 211 (Fla. 1964); *Department of Children and Families*, 903 So. 2d 1011, 1013 (Fla. 5th DCA 2005); *St. Mary's Hosp. v. Bell*, 785 So. 2d 1261, 1262 (Fla. 4th DCA 2001).

A. The trial court adhered to the essential requirements of law.

Before granting access to trade secret information, the trial court must determine whether the party seeking production established reasonable necessity for access to the information. *E.g., American Express Travel Related Servs., Inc. v. Cruz*, 761 So. 2d 1206, 1209 (Fla. 4th DCA 2000); *Scientific Games, Inc. v. Dittler Bros., Inc.*, 586 So. 2d 1128, 1131 (Fla. 1st DCA 1991); *Goodyear Tire & Rubber Co.*, 359 So. 2d 1200, 1203 (Fla. 1st DCA 1978). When considering a petition for certiorari review of an order pertaining to the discovery of trade secret information, the appellate court is to determine whether the trial court has correctly decided the issue; if so, then there is no departure from the essential requirements of law and the order should stand. *See Rare Coin-It, Inc. v. I.J.E., Inc.*, 625 So. 2d 1277, 1279 (Fla. 3d DCA 1993). Here, petitioners were given every opportunity during the course of a two-day hearing to show reasonable necessity; they failed. As a result, the trial court adhered to the essential requirements of law in denying their request to compel disclosure of ES&S' trade secrets.⁵

⁵ Petitioners incorrectly argue that the trial court applied the "reasonable likelihood of success on the merits" standard that courts use when deciding motions for temporary injunctions. *See Jennings' Emergency Petition for a Writ of Certiorari* at 35. There is nothing in the trial court's order to indicate that the court applied this standard or anything but the correct standard. (A:807-809). In fact, the trial court expressly recognized the correct standard: "The sole issue for determination is whether or not Plaintiffs can demonstrate a reasonable necessity to gain access to the trade secret." (A:807).

1. Petitioners failed to demonstrate reasonable necessity for access to ES&S' trade secrets.

All parties stipulated, for purposes of the motions to compel, that the source code and other proprietary technology related to the iVotronic machines is trade secret information belonging to ES&S. (A:807).⁶ Contrary to petitioners' assertions, ES&S was not required to show good cause for protecting or limiting discovery of the trade secrets. When a trade secret privilege has been asserted, a party is only required to show good cause for limiting production if it has not been determined that the information sought is a trade secret. *See American Express*,

⁶ Pursuant to Florida law, the very definition of trade secret presumes that the disclosure of such information will cause economic injury to its owner. Section 688.002, Florida Statutes, defines a "trade secret" as:

information, including a formula, pattern, compilation, program, device, method, technique or process that:

(a) Derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use; and

(b) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

§ 688.002(4), Fla. Stat. (2006). *See also Rare Coin-It*, 625 So. 2d at 127 (finding that disclosure of source code would cause irreparable harm even with a protective order); *Allstate Ins. Co.*, 655 So. 2d at 94 (discovery of trade secrets may reasonably cause material injury of an irreparable nature); *Superior Ins. Co. v. Cano*, 829 So. 2d 991, 992 (Fla. 2d DCA 2002) (disclosure of trade secrets creates potential for irreparable harm).

761 So. 2d at 1208-09.⁷ If, as here, the information constitutes a trade secret, the burden is on the party seeking discovery to demonstrate a reasonable necessity to obtain the information. *E.g.*, *Beck v. Dumas*, 709 So. 2d 601, 603 (Fla. 5th DCA 1998); *Scientific Games*, 586 So. 2d at 1131; *Rare Coin-It*, 625 So. 2d at 1277.

To meet the reasonable necessity requirement, a party must prove the information is reasonably necessary given the particular circumstances of the case. *See id.* This burden is considerably higher than that for the discovery of non-privileged information, and the mere assertion of need is insufficient to establish reasonable necessity. *Beck*, 709 So. 2d at 603 (“the court needed more than the argument of . . . counsel that he ‘needed’ the materials upon which to base its decision to override [the] statutory privilege against disclosure”); *Goodyear*, 359 So. 2d at 1203 (finding that request for access to defendant’s tire plant was not reasonably necessary where there was no finding that in fact the equipment located in that plant was used in producing the [tires at issue] or tires substantially identical or similar in construction); sufficient predicate of reasonable necessity had not been laid). Rather, there must be some evidentiary showing by the requesting party that there is a **valid basis** for review of the other party’s secret information.

⁷ The federal case law cited by petitioners on this point is inapplicable here where Florida law controls. One such case makes this inapplicability clear. *See Auto Owners Ins. Co. v. Totaltape, Inc.*, 135 F.R.D. 199, 203 (M.D. Fla. 1990) (in action pertaining to discovery of trade secrets under Florida law, “federal case law does not apply”).

See Strasser v. Yalamanchi, 669 So. 2d 1142, 1145 (Fla. 4th DCA 1996); *Beck*, 709 So. at 603; *Goodyear*, 359 So. 2d at 1203. Otherwise, any plaintiff could make a bare allegation in a complaint and obtain the defendant's trade secrets by simply claiming the "need" for the information.⁸ Such a prospect creates disclosure by fiat, eviscerates the statutory protections afforded trade secrets, and renders the case law requiring an evidentiary demonstration of reasonable necessity a nullity.

Once the requesting party has presented the required evidence of reasonable necessity, the court then weighs the competing interest of the parties in determining whether the reasonable necessity does or does not outweigh the trade secret statutory protections. *Beck*, 709 So. 2d at 603.

a. Petitioners' claimed need of access to the source code was based solely upon speculation and conjecture.

During the evidentiary hearing petitioners did little more than parrot the unsupported allegations in their complaints that the undervotes in the election were the result of "pervasive malfunctioning of voting machines." From the petitioners' offering, two things emerged: (i) there is no evidence of a physical malfunction of the machines, (A:545); rather, petitioners rely upon statistical speculation that is premised on the assumption that a malfunction occurred (A:548); and (ii) the

⁸ Ms. Jennings appears to do just that by relying upon the bare allegations of the complaint. *See, e.g.,* Jennings' Opposition to Motion to Strike Petition, at 1 (justifying inclusion of her amended complaint in the record appendix and reliance thereupon in support of the petition). Allegations in a pleading are no substitute for evidence.

proffered basis for reasonable necessity for access to the source code is that Ms. Jennings' expert cannot "rule out" the existence of a software bug without the code. (*E.g.*, A:563, 586).⁹

The statistical hypothesis introduced through Mr. Stewart is in no way probative of whether the iVotronic machines malfunctioned and cannot support the claim of reasonable necessity for access to the source code. At bottom, Mr. Stewart theorizes that an excess number of undervotes was caused by the use of the iVotronic machines and that Ms. Jennings would have won the election if those excess undervotes were statistically "reallocated" as legal votes for the two candidates. (A:534). Stewart conceded that "**there is no evidence of a physical malfunction of the machines,**" (A:545) and that his definition of "excess undervotes" "**presupposes** some peculiarity [*i.e.*, machine malfunction] associated with an election." (A:548) (emphasis added).¹⁰ Mr. Stewart's analysis has nothing

⁹ Petitioner's ultimate burden of proof at trial is not to "rule out" or disprove the existence of a "bug" but, rather, to prove the existence of a "bug" that caused the rejection of a number of legal votes for Ms. Jennings sufficient to change or place in doubt the result of the election. That Mr. Wallach views the inquiry here as the need to disprove a negative is confirmed when he attempted to downplay parallel testing by stating: "a broad truism is that [parallel] testing **can never identify the absence of bugs**; it can only show the presence of bugs." (A:586) (emphasis added).

¹⁰ Despite the lack of physical evidence, Mr. Stewart "concludes" that there was a machine malfunction based solely upon a newspaper article regarding individuals who reportedly had some voting problems; however, he could not identify any voters that had voting difficulties nor the nature of the alleged problems, nor had he interviewed any such voters. (A:546). Stewart's failure to interview a single

to do with any purported problems with the source code, software bugs or hardware malfunction, nor does it provide any direct evidence on those issues. (A:545).¹¹

voter is curious given that he surely had access to the “hundreds” of such voters alleged to have provided statements to Ms. Jennings in her complaint. (A:17, 223) (alleging that “hundreds of [voters] attest to pervasive difficulties in the recording of votes on the Thirteenth congressional district race.”).

¹¹ On a more fundamental level, Mr. Stewart’s testimony reveals that his hypothesis is not probative of any issue in this case, let alone establishing reasonable necessity. Mr. Stewart readily admits that he cannot determine voter intent; instead, he merely supplies statistics “about the behavior of voters using particular types of machines” (A:545), and offers an “attempt to estimate ... how that pool of voters **would have** cast their ballots in this particular case” absent the presumed malfunction. (A:551) (emphasis added). Critically, he cannot prove the actual number of “excess undervotes” in the Congressional District 13 race (A:550), let alone the precise number of claimed excess undervotes or “legal votes” that should have been counted for Ms. Jennings. Despite this and based upon his statistical “allocation” of the excess undervotes, Stewart believes that Ms. Jennings would have won if it can be shown that 10 percent of the excess undervotes were caused by machine malfunction. Incredibly, he cannot determine which, if any, of the five proffered hypotheses may have caused the excess undervotes, nor is he able to attribute any statistical probability to the likelihood that any one hypothesis might be responsible for causing the excess undervotes. The following exchange is telling:

- Q: Can you tell the court what percentage of the excess undervote is attributable to the voter abstention or turnoff hypotheses ...?
- A: **I've done no work that's attempted to identify that number.**
- Q: Are you able to tell the court the number of excess undervotes attributable to the [flawed] ballot design theory ...?
- A: **I've done no research to try to parse out the different contributing factors to the excess undervote.**
- Q: . . . [C]an you tell the court what percentage of excess undervotes is attributable to the malicious code hypothesis ...?

Stewart's testimony reveals nothing more than what is already known -- that there was an apparently large number of excess undervotes in the District 13 race and that iVotronic machines were used in Sarasota County. For purposes of the instant petition, it is clear that Stewart's testimony is in no way probative of whether the machines malfunctioned and is wholly insufficient to support a claim of reasonable necessity for access to the source code.

Mr. Wallach's testimony was likewise based upon assumptions that fail to sustain a claim of reasonable necessity. While Mr. Wallach offered five hypotheses¹² that might explain the excess undervotes, he reached no conclusion as

A: **I have no data about that.**

Q: And can you tell the court ... what percentage of the excess undervotes is attributable to this software bug that Dr. Wallach references in his report?

A: **I have no evidence about that.**

Q: Is there any way that you can tell the court what percentages are attributable to any of these hypotheses?

A: **I know of, off the top of my head, no way in which you could test those**, but I am not -- I am not an expert in how those bugs would manifest themselves in the voting record.

(A:531) (emphasis added). Thus, critically, Stewart cannot provide any support for his proposed allocation and is unable to validate his belief that Ms. Jennings would have won. More importantly, the evidentiary hearing revealed a key and uncontroverted fact: Stewart cannot determine the number of legal votes, if any, cast for Ms. Jennings that were not counted. (A:550) (emphasis added).

¹² A "hypothesis" is: "1A: *an assumption* or concession made for the sake of argument 2: *a tentative assumption* made in order to draw out and test its logical or empirical consequences." Miriam-Webster's Collegiate Dictionary 572 (10th ed. 1999) (emphasis added).

to which, if any, caused them.¹³ (A:584). One of his hypotheses, and the one relied upon by petitioners in their contests below, posits that the excess undervotes might be due to a software bug. Mr. Wallach claimed to need access to the source code because “[w]ithout the source code we would be **unable to rule out** the software bug hypothesis.” (A:563) (emphasis added). At the same time, he admitted that parallel testing of the voting machines, of the sort conducted by the State, could show the presence of software bugs. (A:586, 591, 594, 600). To this end he stated parallel “[t]esting can demonstrate beyond a doubt that a problem exists.” (A:591). Mr. Wallach testified that the review of a source code might never reveal the presence of a software bug or that such a review might take years to find a bug if one exists. (A:586). He also testified that he had never seen a bug causing a voting machine to create undervotes for a specific candidate during an election that did not show up at all in voting machine testing. (A:601). Mr. Wallach’s testimony does not support a finding of reasonable necessity of access to the source code; rather, it suggests parallel testing is a better indicator of machine malfunction.

From the above, it is clear that petitioners could offer no more than mere speculation and conjecture and did not meet their burden for demonstrating

¹³ Other of Mr. Wallach’s hypotheses include flawed ballot design, voter abstention, and intentional malicious programming of the software. (A:551, 589, 591-594).

reasonable necessity for access to the source code so as to outweigh ES&S' statutory protections of such trade secrets. *See Goodyear*, 359 So. 2d at 1203; *Beck*, 709 So. 2d at 603.¹⁴ On this basis alone, the trial court properly denied the motions to compel.

b. Uncontroverted record evidence demonstrates the absence of reasonable necessity.

Petitioners' failure to demonstrate reasonable necessity should end this court's inquiry and result in affirming the order below. Uncontroverted evidence below, however, confirms that the trial court complied with the essential requirements of law in denying the motions to compel. At the hearing, ES&S presented considerable direct -- and uncontroverted -- evidence to show that the iVotronic machines functioned with 100% accuracy.

***Pre-Election Testing and Certification
Demonstrates 100% Accuracy of Voting Machines***

The undisputed record evidence showed that prior to the 2006 elections, the Florida Department of State, Division of Elections, successfully tested and

¹⁴ Since petitioners did not meet their burden of establishing reasonable necessity, ES&S' trade secrets are not discoverable and it was not necessary for the trial court to decide the issue of whether a protective order could reasonably protect ES&S' trade secrets. *See Rare Coin-It*, 625 So. 2d at 1278 (without a showing of reasonable necessity for access to defendant's source code, disclosure of source code to plaintiff was inappropriate even subject to a protective order); *American Express*, 761 So. 2d at 1209 (disclosure of trade secrets pursuant to protective order or confidential agreement was not sufficient where there was no showing that necessity for trade secrets outweighed privilege).

certified the iVotronic voting system pursuant to its charge to examine and approve voting systems under the Electronic Voting Systems Act (the “Act”). §§ 101.5601 - 5614, Fla. Stat. (2006).¹⁵ (A:643-647). The undisputed record evidence also revealed that, prior to the election and pursuant to section 101.5612, Florida Statutes, the Sarasota Supervisor of Elections publicly conducted logic and accuracy testing of the voting machines at issue and the Sarasota Canvassing Board verified the correctness of all totals for votes cast during the tests including

¹⁵ The Act outlawed the use of punch card type voting systems and authorized “the use of electronic and electromechanical voting systems in which votes are registered electronically or are tabulated on automatic tabulating equipment or data processing equipment.” §§ 101.5602, 101.56042, Fla. Stat. (2006). The Act also created a comprehensive legislative framework governing: (i) the performance and accessibility standards for electronic voting systems used in Florida, (ii) the pre-purchase testing and certification of electronic voting systems by the Florida Department of State, (iii) additional county-based pre-election testing and verification, and (iv) the post-election canvass of returns from the electronic voting systems. §§ 101.5601 - 5614, Fla. Stat. The electronic voting system’s vote counting segment must meet electronic industry standards; in addition, Florida law requires that:

testing shall include, but is not limited to, testing of all software required for the voting system’s operation; the ballot reader; the rote processor, especially in its logic and memory components; the digital printer; the fail-safe operations; the counting center environmental requirements; and the equipment reliability estimate. For the purpose of assisting in examining the system, the department shall employ or contract for services of at least one individual who is expert in one or more fields of data processing, mechanical engineering, and public administration

§ 101.5605(2)(a), Fla. Stat. (2006).

undervotes.¹⁶ (A:648-51). Petitioners presented no evidence challenging the results of these statutorily mandated pre-election voting machine tests and certifications.

***Post-Election Parallel Testing
Demonstrates 100% Accuracy of Voting Machines***

ES&S also presented evidence of the post-election audit of the Sarasota County iVotronic machines ordered by the Secretary of State pursuant to section 101.5607(1)(c), Florida Statutes.¹⁷ The audit consisted of a “parallel test” of the voting machines used by Sarasota County and a separate source code review. (A:529, 721). The Secretary of State, Division of Elections, issued a written report which was entered into evidence. (A:652-660). The parallel test “focused on the

¹⁶ If, as a result of a public logic and accuracy test, a device is found to have a single error it shall be deemed unsatisfactory for use in the election. § 101.5612(4)(a)(2), Fla. Stat. (2006). In such a case, the canvassing board is required to identify and test other devices that could reasonably be expected to have the same error; the canvassing board must test a number of additional devices sufficient to determine that all devices are satisfactory. *Id.* At the completion of testing, representatives of the canvassing board, political parties and the candidates (or their representatives) in attendance shall witness the resetting and sealing of each device that passed the pre-election testing. § 101.5612(4)(b), Fla. Stat. (2006).

¹⁷ Section 101.5607(1), Florida Statutes, requires that the Department of State must maintain on file information, specifications, or documentation relating to an approved electronic or electromechanical voting system and that:

The Department of State may, at any time, review the voting system of any county to ensure compliance with the Electronic Voting Systems Act.

§ 101.5607(1)(c), Fla. Stat. (2006).

iVotronic touchscreen’s **ability to accurately record a voter’s selections** as presented to the voter on the touchscreen’s ballot review pages.” (A:653) (emphasis added). The testing “also examined various complaints regarding a voter’s ability or difficulty in making his or her vote selections.” *Id.* As noted in the report, “[t]he intent of this parallel activity is to **ascertain the accuracy and reliability of the deployed voting devices** with consideration given to ballot style, layout, coding, demographics, and operation.” (A:654) (emphasis added). The tests were performed on the machines with the highest undervote totals from the precincts that experienced the highest levels of undervotes and were selected by the parties to this proceeding. *Id.* The State’s tests “were successful in **demonstrating 100% accuracy** in recording the vote selections as indicated on the review screens.” (A:659) (emphasis added).

Petitioners offered absolutely no evidence to rebut the State’s conclusion “that the iVotronic touchscreens accurately captures the voter’s selection as presented to the voter on the review screens.” (A:653). To the contrary, when cross-examined on the parallel testing report, Ms. Jennings’ expert Dan Wallach admitted: “**I don’t doubt its accuracy.**” (A:600) (emphasis added).¹⁸

¹⁸ Nevertheless, Mr. Wallach quibbled with the test’s completeness. *Id.* On redirect, he was led down a laundry list of items by Jennings’ counsel which, if included, he agreed would have made the parallel testing “more complete.” (A:601-02). Such factors included demographic selection of test voters, the number of machines tested and the rapidity or steadiness of finger touches. *Id.*

The State's Parallel Test Report is Admissible

Petitioners incorrectly argue that the State's parallel test report is inadmissible hearsay and does not fall within the hearsay exception for public records under section 90.803(8), Florida Statutes. Under section 90.803(8), two types of public records and reports are admissible. The first type of public records within the hearsay exception are "records, reports, statements reduced to writing, or data compilations, in any form, of public offices or agencies, setting forth the activities of the office or agency." § 90.803(8), Fla. Stat. (2006). These records include official reports of a factual or statistical nature. *See* Charles W. Ehrhardt, *Florida Evidence* § 803.8 at 921 (2006 ed.). The second type of records falling within the exception are records of a public office or agency which set forth "matters observed pursuant to duty imposed by law as to matters which there was a duty to report." § 90.803(8), Fla. Stat.

A third type of public record which is not admissible under section 90.803(8), but which is admissible under the corresponding federal rule, is a public record setting forth "factual findings resulting from an investigation made pursuant to authority granted by law." Fed. R. Evid. 803(8). The purpose of this provision in the federal rules is to provide for admission of records and reports by a public

None of the factors, however, addressed the ultimate question of whether the iVotronic machines accurately recorded the voter's selection as presented to the voter on the review screens.

official when the official is required to interpret and evaluate facts and information supplied by persons outside the agency. Ehrhardt, § 803.8 at 925. While admissible under the federal rules, records that rely on information supplied by outside sources or that contain subjective evaluations or statements of opinion by a public official are inadmissible in Florida. *Lee v. Department of Health & Rehab. Servs.*, 698 So. 2d 1194, 1201 (Fla. 1997) (*citing* Ehrhardt, § 803.8). In Florida, a witness must be called when offering this type of public record. *Id.*

Petitioners rely upon *Lee* to support their argument that the State's parallel test report is inadmissible. *Lee* is clearly distinguishable and such reliance is misplaced given the circumstances at bar. In *Lee*, the court found that a report prepared by a state employee in the course of investigating the circumstances surrounding the impregnation of a severely retarded woman in the custody of the state was not admissible under section 90.803(8). The state employee's report included hearsay statements of the victim and other patients in the state facility who were not employees or agents of the state. The court found that the report fell squarely under the third category of documents described above and held that the report was inadmissible under Florida law. 698 So. 2d at 1201.

Here, the State's parallel test report does not suffer from the same hearsay and reliability concerns as the report at issue in *Lee*. The State's parallel test report does not rely upon information supplied by outside sources and does not contain

subjective evaluations or opinions based upon outside sources. Rather, it is a report of a factual or statistical nature. Moreover, it sets forth the activities of a state agency and records “matters observed pursuant to duty imposed by law as to matters which there was a duty to report.” Specifically, the Department of State, Division of Elections, is charged with the statutory duty to conduct and memorialize such testing as part of ensuring a voting system’s compliance with the Electronic Voting Systems Act. As such, the report falls directly within the ambit of section 90.803(8).¹⁹ In accordance with Florida law, the trial court appropriately admitted the parallel test report.²⁰

¹⁹ The report is also similar to others found admissible by this court pursuant to section 90.803(8). See *Desmond v. Medic Ayers Nursing Home*, 492 So. 2d 427, 430-31 (Fla. 1st DCA 1986) (finding report prepared by state epidemiologist pursuant to inspection of nursing home to ensure compliance with state standards and containing results of epidemiologists’ inspection and recommendations was admissible even though statute did not specifically require a written report to be prepared); *Florida Ass’n of Counties, Inc. v. Department of Admin.*, 580 So. 2d 641, 645-46 (Fla. 1st DCA 1991) (reports submitted in connection with activity of agency which was mandated by law were admissible); *Department of Prof’l Regulation v. Toledo Realty, Inc.*, 549 So. 2d 715, 717 (Fla. 1st DCA 1989) (investigative report of realty company was within exception to hearsay rule as a public record of the agency).

²⁰ It should also be noted that extensive corroborating testimony pertaining to the parallel test report was introduced during the evidentiary hearing without a single objection by petitioners. (See, e.g., A:588-89, 594, 596, 600-02). Although clearly admissible, to the extent petitioners might argue otherwise, the failure to object renders the testimony amenable to consideration by the trial court. See, e.g., *Laws v. Florida*, 356 So. 2d 7, 8 (Fla. 4th DCA 1977), *cert. denied*, 354 So. 2d 982 (Fla. 1977); *Baker v. Florida*, 336 So. 2d 364, 366 (Fla. 1976); *Smith v. Florida*, 73 So. 188 (Fla. 1916). Thus, even if it could be said that the parallel test report is

The only direct and uncontroverted evidence concerning the machines operations and performance introduced at the hearing showed that the voting machines performed with 100% accuracy in recording vote selections as indicated on the review screens. Petitioners merely repeated their bare allegations of voting machine malfunction without producing any credible supporting evidence. As a result, petitioners failed to meet their evidentiary burden of showing that they had a valid basis for obtaining the trade secrets.

Therefore, in considering and weighing all of the evidence presented by the parties, the trial court correctly found that there was no evidence of reasonable necessity for access to the secret information so as to outweigh the statutory trade secret protections afforded ES&S.²¹ There is more than ample evidence to support

inadmissible, the trial court was entitled to and apparently did rely upon the extensive testimony concerning the report.

²¹ Additionally, the production of confidential information should not be compelled where there is a less intrusive means of obtaining relevant information. *Menke v. Broward County School Bd.*, 916 So. 2d 8, 11-12 (Fla. 4th DCA 2005) (intrusive searching of entire computer by an opposing party should not be the first means of obtaining relevant information); *Compton v. West Volusia Hosp. Auth.*, 727 So. 2d 379, 381 (Fla. 5th Cir. 1999) (where information regarding whether testatrix' competency could be obtained in less intrusive ways, party was not entitled to production of her unpublished will); *Strasser*, 669 So. 2d at 1145 (plaintiff's search of defendant's computer system was improper if there was a less intrusive manner to obtain information). To this end, petitioners' own expert testified that that the testing of voting machines, certainly a less intrusive discovery method, could also show the presence of software bugs. (A:586, 591, 594, 600). Moreover, the Department of State is in the process of retaining a team of independent experts to conduct the source code review phase of its audit. (A:760).

the trial court's decision in this matter.²² Consequently, the trial court did not depart from the essential requirements of law in denying petitioners motions to compel so as to justify certiorari review by this court.

B. Petitioners have shown no material injury which cannot be remedied on direct appeal at the conclusion of the case.

While it is clear that the petitions should be denied because the trial court adhered to the essential requirements of law, the petitions should be denied for another reason: petitioners have not established that the order creates a material injury which cannot be corrected on direct appeal. Such a requirement is jurisdictional and prevents the appellate court from further consideration of the matter. *Sardinas v. Lagares*, 805 So. 2d 1024, 1025 (Fla. 3d DCA 2002). Because petitioners have made no showing of any conceivable injury resulting from the trial court's denial of their motions to compel that could not be remedied on appeal, certiorari is inappropriate and the court need go no further in its review. *Id.*

This is not a situation warranting the extraordinary remedy of certiorari review of a discovery order. Mere delay or time, trouble and expense of adjudication are not "irreparable harm" sufficient to invoke this extreme relief. *See, e.g., Smithers v. Smithers*, 743 So. 2d 605, 606 (Fla. 4th DCA 1999); *Brown &*

²² On certiorari review, it is not the practice of the reviewing court to reweigh or reevaluate the evidence. *Dade County*, 326 So. 2d at 185; *Dresner*, 164 So. 2d at 211; *Clem*, 903 So. 2d at 1013; *St. Mary's Hosp.*, 785 So. 2d at 1262.

Williamson Tobacco Corp. v. Carter, 680 So. 2d 546, 547 (Fla. 1st DCA 1996).

When a discovery order is at issue, review by certiorari is most appropriate when the order at issue improperly *compels* discovery. *Gadsden County Times, Inc. v. Horne*, 426 So. 2d 1234, 1236 (Fla. 1st DCA 1983). To this end, district courts traditionally review orders wrongfully granting discovery where the information to be disclosed includes “cat-out-of-the bag” information that could be used to injure a party outside the context of the litigation, and information protected by a privilege or which is a trade secret or work product. *Allstate Ins. Co.*, 655 So. 2d at 94 (Fla. 1995); *Riano v. Heritage Corp. of South Fla.*, 665 So. 2d 1142, 1144 (Fla. 3d DCA 1996). Once disclosed, such information cannot be retracted. Even if an order mandating the discovery of this kind of information is reversed on appeal, there is no adequate remedy to correct such an irreparable injury -- the bell of compelled disclosure of a trade secret cannot be un-rung. *Id.*; *American Express*, 761 So. 2d at 1209 (order wrongfully requiring disclosure of computer trade secrets could not be remedied on appeal); *Rare Coin-It*, 625 So. 2d 1279 (order wrongfully requiring disclosure of source code subject to protective order would result in a material injury irreparable on appeal).

Conversely, courts on certiorari ordinarily do not review orders *denying* discovery because any harm resulting from such orders can be rectified on appeal. See *Riano*, 665 So. 2d at 1144. As such, while certiorari review of an order

denying discovery may be appropriate in very rare and extraordinary instances,²³ certiorari is not appropriate where the trial court has refused discovery of information protected by a privilege. *See Esman v. Board of Regents*, 425 So. 2d 156, 157 (Fla. 1st DCA 1983); *accord State Farm Mut. Auto. Ins. Co. v. Peters*, 611 So. 2d 597, 598 (Fla. 2d DCA 1993). Florida case law is devoid of authority where certiorari has been granted to overturn a trial court's denial of the disclosure of trade secrets. A trial court's interlocutory ruling denying access to such information "does not furnish the occasion for this court's intervention through the use of the extraordinary writ." *See Esman*, 425 So. 2d at 157. Moreover, as alternative means exist for petitioners to conduct discovery, *see* note 21, above, denial of access to the trade secrets here cannot constitute "irreparable" or "material" "injury" warranting certiorari review.

Given the law established by this and other Florida courts, the trial court's denial of petitioners' motions to compel trade secret information is not reviewable on certiorari, and the petitions should be denied.

²³ Exceptions to the general rule that certiorari will not be granted to review an order denying discovery are generally made only in those cases involving a material witness that is necessary to a party's case. *Duran v. MFM*, 841 So. 2d 500, 501 (Fla. 3d DCA 2003). *See also, e.g., Bush v. Shiavo*, 866 So. 2d 136, 140 (Fla. 2d DCA 2004); *Travelers Indemnity Co.*, 388 So. 2d 648, 650 (Fla. 5th DCA 1980).

CONCLUSION

For the foregoing reasons, Respondent Congressman Vern Buchanan respectfully requests that this court deny the petitions for a writ of certiorari.

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I certify that this brief was typed in Times New Roman 14-point font in compliance with Rule 9.100(l), Florida Rules of Appellate Procedure.



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IN THE DISTRICT COURT OF APPEAL
FIRST DISTRICT OF FLORIDA
CASE NO. 1D07-11
LT NO. 2006 CA 2973

CHRISTINE JENNINGS,

Petitioner,

v.

ELECTIONS CANVASSING COMMISSION OF THE STATE OF FLORIDA;
SARASOTA COUNTY CANVASSING BOARD;
KATHY DENT, as SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
KURT S. BROWNING, as SECRETARY OF STATE
OF THE STATE OF FLORIDA;
AMY K. TUCK, as DIRECTOR OF THE DIVISION OF ELECTIONS
OF THE STATE OF FLORIDA;
VERN BUCHANAN; and
ELECTION SYSTEMS & SOFTWARE, INC.,

Respondents.

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INTRODUCTION

Although they collectively consume nearly a hundred pages, Respondents' briefs are most notable for what they don't say:

- None of the Respondents disputes that "the primary consideration in an election contest is whether the will of the people has been effected."¹
- No one refutes the conclusion of ES&S's expert, Professor Herron, that "there is essentially a 100 percent chance the 13th Congressional District election result would have been reversed in the absence of the large Sarasota County undervote."²
- No one refutes the shared conclusion of both sides' experts (Professors Herron and Stewart) that the Sarasota County undervote cost Christine Jennings between 3,000 and 4,000 more votes than it cost Vern Buchanan.
- No one refutes that statistics alone can never determine whether, or how much, the malfunctioning of the iVotronic electronic touch-screen voting system contributed to the Sarasota County undervote.
- No one refutes that the key to making those determinations is to comprehensively test the iVotronic hardware, software, and source code.

¹ *Boardman v. Esteve*, 323 So. 2d 259, 269 (Fla. 1975).

² Michael C. Herron *et al.*, Ballot Formats, Touchscreens, and Undervotes: A Study of the 2006 Midterm Elections in Florida, at i, *available at* <http://www.dartmouth.edu/~herron/cd13.pdf> (accessed Feb. 20, 2007); *accord* A 623 (reaffirming that conclusion).

- No one contends that Jennings or her attorneys or experts are business competitors of the trade secrets' owner, ES&S, or that they would abuse their access to those trade secrets by leaking them to ES&S's competitors in violation of a protective order.

So the key question in this case is not *whether* democracy failed the people of Florida's Thirteenth District, but *why*. Respondents claim that the ballot format confused the voters, who therefore failed to cast their intended congressional ballots. Jennings claims that the voters cast their intended congressional ballots but the machines failed to record them correctly. The only way to resolve this dispute is to allow *all* parties to independently test the iVotronic system's hardware and software, including its source code.

I. The Trial Court's Order Created a Material Injury that Cannot Be Adequately Remedied on Appeal.

Neither ES&S nor the County Defendants — who filed no response to this Court's show-cause Order, even though they are the target of Jennings's motion to compel production of the iVotronic hardware (and much of the software, too) — even attempts to claim that the injury inflicted by the order below can be adequately remedied on appeal from a final judgment. Alone among the Respondents, Buchanan and the State Defendants assert that “[m]ere delay” can never irreparably harm a litigant (Buchanan Br. at 26) and that even acknowledging the trial court's refusal to expedite this case is “improper” (State

Br. at 3-4). But those arguments ignore the fact that this is an election contest for a public office whose term lasts only 24 months. In a case like this, justice delayed is justice denied. *See* Pet. at 30-31.

II. The Trial Court Departed from the Essential Requirements of Florida's Three-Step Legal Test for Discovery Disputes Involving Trade Secrets.

A. The Trial Court Did Not Apply the "Reasonable Necessity" Standard.

In defending the order below, Respondents proclaim a novel version of the "reasonable necessity" standard that places the proverbial cart squarely in front of the horse, demanding that Jennings prove her case in order to win access to the evidence that is "reasonably necessary" to prove her case. Under this standard, no corporation would ever have to disclose a trade secret: At the discovery phase, either the plaintiff will be unable to prove her case, or her ability to prove it will eviscerate her claim that access to the trade secret is "reasonably necessary."

So it is no surprise when Respondents find that Jennings has fallen short of their proposed standard. Seemingly oblivious to irony, they criticize Jennings's computer-science expert, Professor Wallach, for "reach[ing] no conclusion as to the cause of the undervote." ES&S Br. at 14; *see* Buchanan Br. at 16-17 (also complaining that he "reached no conclusion"). But the whole point of Professor Wallach's testimony was that no one could sensibly reach such a conclusion without full access to the iVotronic system. A 558-63.

Respondents repeatedly fault Jennings's experts for having nothing but "theories" to explain the undervote. But at this stage of the litigation, nothing more is required. As noted in a case requiring disclosure of one of the most closely guarded trade secrets in history — the formula for Coca-Cola — "[t]he level of necessity that must be shown is that the information must be necessary for the movant to prepare its case for trial, which includes proving its theories and rebutting its opponent's theories." *Coca-Cola Bottling Co. of Shreveport, Inc. v. Coca-Cola Co.*, 107 F.R.D. 288, 293 (D. Del. 1985). Clearly, Jennings has met this standard.

Nonetheless, Respondents assert that the record lacks "any evidence supporting Jennings's claim of machine malfunction" or software bugs, that her complaint is "completely frivolous," and that her allegations are "groundless." State Br. at 7; ES&S Br. at 33-35. Those assertions are baffling. Jennings has at least 14,000 reasons to "suspect[] that the source code is tainted" and the machines malfunctioned. State Br. at 7. Both sides' experts testified that the number of congressional undervotes in Sarasota County exceeded the norm by at least 14,000 ballots. A 532-34, 549, 621-22. Both sides' experts testified that this undervote rate was at least six times what they would have expected. *Id.* And both sides' experts testified that any alleged voter revulsion with the candidates could not possibly explain this historically aberrational undervote rate. *Id.* at 536, 544, 554,

622. Contrary to the trial court’s findings (*id.* at 808), there was nothing “speculati[ve]” or “conjectur[al]” about this uncontroverted evidence.³

Respondents’ briefs repeatedly misrepresent the record. Just to take one example, they attack Jennings’s political-science expert, Professor Stewart, for “conclud[ing]” that there was a machine malfunction based *solely* upon a newspaper article regarding individuals who reportedly had some voting problems.” Buchanan Br. at 14 n.10 (citing A 546) (emphasis added); *accord* ES&S Br. at 13 (calling the newspaper report “the sole basis” for his conclusion) (citing A 546). The actual trial transcript says nothing of the sort:

Q: Now, *in your declaration, there at page 36*, you support your conclusion of a possible cause of machine malfunction by relying on a newspaper report stating that most callers to the newspaper reported voting problems; correct?

A: That’s the citation in that paragraph, yes, sir.

³ Where the two experts diverged was over the issue of causation. Relying heavily on undervote data for each of Sarasota County’s 1,500 machines, Professor Stewart testified that machine failure *likely* caused the excess undervote. A 540-41, 553-54, 579-80. But ES&S’s expert, Professor Herron, testified that “voter confusion — not machine malfunction — *likely* caused the unusual undervote.” State Br. at 8 (emphasis added) (citing A 613, 620). He relied heavily on county-level data showing high undervote rates for the Attorney General’s race in Charlotte, Lee, and Sumter Counties, where the ballot format allegedly resembled that found in the congressional race in Sarasota County. A 694, 697. On cross-examination, however, Professor Herron conceded that there was another common thread connecting the four counties — they all used the same version of the iVotronic system, with the same type of hardware and the same source code. *See id.* at 624-25, 629-30.

Q: That's *the sole basis in that section of your report* for a conclusion that there was a machine malfunction; correct, sir?

A: That is — *that's the citation, yes, sir.*

A 546 (emphasis added). So this testimony focused on a single citation on a single page of Professor Stewart's pre-hearing declaration. As Respondents well know, Professor Stewart's three hours of live, in-court testimony documented extensive statistical evidence pointing directly to a failure of the machines. *See* Pet. at 17-18 (citing, *e.g.*, A 540-41, 553-54, 579-80). Unfortunately, this instance of Respondents misrepresenting testimony is but one of many examples.⁴

Respondents' twisting of the record evidence cannot disguise what lies at the core of this dispute. ES&S's trade secrets are indispensable to ascertaining the truth about the 2006 election. At this point, Jennings's case is founded on allegations of machine malfunction that are backed by compelling expert testimony, much of which is undisputed. But to prepare her case for trial, Jennings needs access to the machines to prove her theories and to rebut Respondents'. Because denying her that access would "work [an] injustice," FLA. STAT. ANN. § 90.506, the trade-secret privilege must give way.

⁴ For example, in asserting that there is "no evidence" of a "physical" malfunction of the machines, Buchanan Br. at 13 (citing A 545 (Prof. Stewart)); ES&S Br. at 13 (same), Respondents take Professor Stewart's testimony wildly out of context. Professor Stewart was responding to counsel's specific question about pages 24 to 35 of his declaration and merely confirmed that he had made no mention of a "physical malfunction" in those particular pages. A 545.

B. The Trial Court Bypassed Florida's Balancing Test.

Misapplying the “reasonable necessity” standard led the trial court to depart from the essential requirements of law by refusing to conduct the proper balancing test. *See* Pet. at 32-34, 38-41. Contrary to Respondents’ contention (*see, e.g.*, State Br. at 8-9; ES&S Br. at 38-39), numerous Florida decisions expressly mandate this balancing test in all cases of reasonable necessity, requiring trial courts to weigh the plaintiff’s interest in production against the defendant’s interest in maintaining confidentiality.⁵ Respondents plainly recognized this blackletter law when, at the hearing’s opening, *they* asked the trial judge to undertake a “balancing of interest[s],” weighing Jennings’s “necessity for this privileged information [against] the harm that disclosure will cause to the trade-secret owner.” A 528-29. The next day, however, Respondents made a tactical decision not to put on any evidence of such harm. Now they must live with that decision.

Respondents’ failure to adduce evidence of harm cannot be cured simply by highlighting the statutory definition of a “trade secret” as something that has “‘independent economic value.’” State Br. at 9-10 (quoting FLA. STAT. ANN.

⁵ *See, e.g., Sheridan Healthcorp, Inc. v. Total Health Choice, Inc.*, 770 So. 2d 221, 222-23 (Fla. 3d DCA 2000); *American Express Travel Related Servs., Inc. v. Cruz*, 761 So. 2d 1206, 1208-09 (Fla. 4th DCA 2000); *Beck v. Dumas*, 709 So. 2d 601, 603 (Fla. 4th DCA 1998); *Inrecon v. Village Homes at Country Walk*, 644 So. 2d 103, 105 (Fla. 3d DCA 1994); *Freedom Newspapers, Inc. v. Egly*, 507 So. 2d 1180, 1184 (Fla. 2d DCA 1987); *Fortune Pers. Agency of Ft. Lauderdale, Inc. v. Sun Tech Inc. of S. Fla.*, 423 So. 2d 545, 546 n.6 (Fla. 4th DCA 1982).

§ 688.002(4)); *see* ES&S Br. at 26-28; Buchanan Br. at 11 n.6. That argument confuses the fact of injury with the degree of harm. For a court to “balance” the *amount* of harm to a defendant against the *amount* of benefit to a plaintiff, it must assess not only whether the defendant would be harmed, but also how much it would be harmed — specifically, how much it would be harmed by disclosure *pursuant to a protective order*.

In the hope of skirting that assessment, Respondents repeatedly paint this as an “all or nothing” case, pretending that the issue here is full, unfettered, public disclosure of ES&S’s trade secrets. *See, e.g.*, State Br. at 6 n.4 (warning against “full disclosure”); ES&S Br. at 2 (“unfettered possession of the source code”). But unconstrained access is not at stake here. Jennings has voluntarily agreed to be bound (and to have her attorneys and experts bound) by a stringent protective order. Courts routinely hold that a protective order can adequately accommodate a party’s interest in confidentiality. *See Federal Open Market Comm. of Fed. Reserve Sys. v. Merrill*, 443 U.S. 340, 362 n.24 (1979) (“Actually, orders forbidding any disclosure of trade secrets or confidential commercial information are rare. More commonly, the trial court will enter a protective order restricting disclosure to counsel.”).

But Respondents apparently are concerned more with reputation than confidentiality. They argue that ES&S’s trade secrets should not be disclosed to

Professor Wallach, even pursuant to the protective order (which they concede he would comply with), because, as a foe of paperless voting systems, he might draw on “[t]hat information — consciously or otherwise — [in] his future advocacy undertakings to the detriment of ES&S.” State Br. at 10; *see* ES&S Br. at 32. But a “claim that public disclosure of information will be harmful to a defendant’s reputation is not ‘good cause’ for a protective order,” much less for blocking discovery altogether. *Culinary Foods, Inc. v. Raychem Corp.*, 151 F.R.D. 297, 301 (N.D. Ill. 1993).⁶

C. Trade-Secret Precedents Involving Defective Products Uniformly Reject Respondents’ Arguments.

Because this case is about defective machines, the analogy to products-liability cases is instructive. Those cases rebut Respondents’ arguments in two respects.

First, Respondents suggest that Jennings should be content so long as the State Defendants can conduct their own tests of the iVotronic system. That is absurd. In a products-liability action involving a machine malfunction, it would be unthinkable to require a plaintiff to proceed to trial without equal access to the

⁶ ES&S also frets that Petitioners will “tear apart the machines” and seize “actual electronic ballots cast which are contained in the [machines’] memory.” ES&S Br. at 2. But by adopting a charter amendment last fall, the people of Sarasota County already have banned these machines from future use. A 214. And by design, it is impossible to defeat ballot secrecy and trace “actual electronic ballots” back to particular voters because the electronic ballots are “stripped of any identifying information.” ES&S Br. at 2, 17.

machines. *See, e.g., Sponco Mfg., Inc. v. Alcover*, 656 So. 2d 629, 630-31 (Fla. 3d DCA 1995) (entering a default judgment for plaintiff because the allegedly defective product was damaged or destroyed during testing by the defendant); *Rockwell Int'l Corp. v. Menzies*, 561 So. 2d 677, 679 (Fla. 3d DCA 1990) (same); *DePuy, Inc. v. Eckes*, 427 So. 2d 306, 308 (Fla. 3d DCA 1983) (same).

Here, Respondents contend that Jennings should be denied access to the iVotronic system precisely because the State Defendants have been given access to it. That is backwards. In *National Healthcorp Limited Partnership v. Close*, 787 So. 2d 22 (Fla. 2d DCA 2001), the court noted that defendants “‘absolutely’” were barred from “‘introducing evidence to which the plaintiff had been denied access during discovery.’” *Id.* at 25 (quoting trial court). Indeed, the court could not “‘imagine that [defendants] would think otherwise.’” *Id.* Yet here, that is exactly what has happened. Respondents have been permitted to introduce “evidence” from their own tests of the machines — the Parallel Test Summary Report — while plaintiffs have been denied access to those same machines.

Second, Respondents ignore the fact that Jennings is not a business competitor and that the whole point of trade-secrecy law is to protect confidential materials from competitors. When sued by non-competitors, products-liability defendants who invoke the trade-secret privilege almost invariably lose. *See, e.g., Bridgestone Americas Holding, Inc. v. Mayberry*, 854 N.E.2d 355, 363-64 (Ind. Ct.

App. 2006) (requiring defendant to disclose its proprietary formula for making tires because the formula was “reasonably necessary for [the plaintiff] to have a fair opportunity to develop and prepare her case for trial” and would be disclosed only “to a party who is not in competition with the holder of the trade secret”); *Culligan v. Yamaha Motor Corp., USA*, 110 F.R.D. 122, 125 (S.D.N.Y. 1986) (requiring defendant to disclose product-design information after finding the balance of interests weighed in favor of plaintiff because “the plaintiff is not a competitor, and has no interest in the research data except as it relates to this case” and “an appropriate confidentiality order can fully protect [the manufacturer’s] interest in shielding its research information from its competitors”); *Snowden ex rel. Victor v. Connaught Labs., Inc.*, 136 F.R.D. 694, 699 (D. Kan. 1991) (requiring defendant to disclose the formula for a vaccine where plaintiffs had “no other source for this particular information” and any “harm to defendants can and will be lessened by the entry of a protective order”). Here, the trial court simply ignored that the purpose of the privilege is to prevent disclosure of proprietary information to business competitors and Jennings is no competitor to ES&S. Moreover, the trial court did not even consider whether a protective order could adequately accommodate ES&S’s interests.

III. The Trial Court Departed from the Essential Requirements of the Florida Evidence Code.

Respondents do not even agree among themselves about what might have been a proper basis for admitting the Parallel Test Summary Report. The State Respondents claim that the Report is a public record “setting forth the activities of the office or agency,” within the meaning of Section 90.803(8) of the Evidence Code. State Br. at 11. But that exception to the hearsay rule is limited to “records of a simple factual nature,” such as “records showing the receipts and disbursements of a governmental department or official reports of a statistical nature.” CHARLES W. EHRHARDT, FLORIDA EVIDENCE § 803.8 (2006 ed.) (citing cases involving tax receipts, land-sales records, dates and check numbers of payments, and index cards assigning numbers to filed claims); *see also Dykes v. Quincy Tel. Co.*, 539 So. 2d 503, 505 & n.3 (Fla. 1st DCA 1989) (applying this exception, and refusing to admit records that set forth findings of fact).

Implicitly rejecting the State Respondents’ argument, ES&S instead claims that the Report falls within a different hearsay exception, for public records setting forth “matters observed pursuant to duty imposed by law as to matters which there was a duty to report.” FLA. STAT. ANN. § 90.803(8).

Tellingly, the State — which should know best which matters it is duty-bound to observe and report upon — does not argue that the Report falls within this exception. Nor could the State make such an argument because there is simply

no statutory duty to conduct post-election parallel testing and report on it. The statute that ES&S cites (Br. at 40) as creating this duty — Section 101.58(1), Florida Statutes — does no such thing. Rather, Section 101.58(1) simply requires the Department of State to provide official observers and reports ***upon the petition of the electorate or candidates***. See FLA. STAT. ANN. § 101.58(1). That was not the basis for the Department of State’s audit here.

It is well-established that “[i]f there is not a duty both to observe and to make the report, the document is not admissible.” EHRHARDT, *supra*, § 803.8; see *University of N. Fla. v. Unemployment Appeals Comm’n*, 445 So. 2d 1062, 1063 (Fla. 1st DCA 1984) (refusing to admit documents absent a statutory duty “that they be made or maintained”). Here, none of the Respondents can point to a statute creating a duty to conduct parallel testing and report on it.

The Parallel Test Summary Report is exactly the type of “evaluative report” meant to be excluded under Section 90.803(8). “The drafters felt that the results of official investigations lacked sufficient reliability to offset the prejudice that would result to the party against whom an unreliable report is introduced.” EHRHARDT, *supra*, § 803.8. That is why “[i]n Florida, rather than offering this type of record, a witness must be called who has personal knowledge of the facts.” *Lee v. Department of Health & Human Servs.*, 698 So. 2d 1194, 1201 (Fla. 1997) (citation omitted).

The weakness of Respondents' arguments is demonstrated by the lengths to which they go to provide "alternative" arguments. For example, ES&S contends that the Rules of Evidence do not "strictly apply" here because this was "a hearing on a preliminary question dealing with discovery and the existence of a privilege." ES&S Br. at 39-40. That is bizarre. Florida's Rules of Evidence apply to *all* judicial proceedings "[u]nless otherwise provided by statute," and no statutory exception applies here. FLA. STAT. ANN. § 90.103(1).

Furthermore, as the Petition explains (Pet. at 41, 46-50), the trial court clearly erred when it found that Jennings had "presented no evidence" demonstrating the Report's invalidity. A 808. Professor Wallach testified that, although he did not doubt the "accuracy" of the State's audit, he did doubt its "completeness" and thus viewed its results as untrustworthy. A 600; *see* Pet. at 45-50 (citing A 559, 563, 586-89, 594-96, 600-02 (cataloging six key shortcomings that rendered the audit's parallel test incomplete and untrustworthy)).

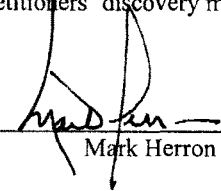
IV. Florida's Election Laws Do Not Preclude the Requested Discovery.

Recognizing the weakness of its position on the trade-secrets privilege, ES&S asserts that Florida's election laws somehow independently bar Jennings from discovery in this case. *See* ES&S Br. at 46-50. To the contrary, in election contests Florida courts routinely have allowed plaintiffs to access and examine voting machines and ballots. For example, in *Wikler v. Haber*, 277 So. 2d 51 (Fla.

3d DCA 1973), by court order, “[p]etitioner, his attorney and his representatives” were allowed to “examine[] all the voting machines” used in key precincts where problems allegedly had arisen. *Id.* at 52. After the petitioner’s “check, recheck, and tabulation” of those machines showed no error, the court dismissed the election contest. *See id.*; *see also, e.g., Beckstrom v. Volusia County Canvassing Bd.*, 707 So. 2d 720, 726 (Fla. 1998); *McLean v. Bellamy*, 437 So. 2d 737, 750 (Fla. 1st DCA 1983); *Barber v. Moody*, 229 So. 2d 284, 286-87 (Fla. 1st DCA 1969); *Spradley v. Bailey*, 292 So. 2d 27, 30 (Fla. 1st DCA 1974). ES&S’s interpretation of the election statutes is simply erroneous and, tellingly, is not shared by those charged with enforcing and administering the statutes — the State Respondents.

CONCLUSION

This Court has long held that “the purpose of the statutes permitting election contests is to prevent the thwarting of the will of the electors either by fraud or by common mistakes honestly made.” *Barber*, 229 So. 2d at 286. To effectuate that purpose, the Court should grant the writ of certiorari on an expedited basis and quash the trial court’s order denying Petitioners’ discovery motions.



Mark Herron

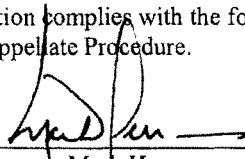
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I HEREBY CERTIFY that this Petition complies with the font requirements of Rule 9.100(1) of the Florida Rules of Appellate Procedure.



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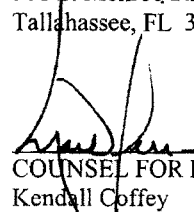
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IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, a nominee of the
Democratic party for Representative in Congress
from the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

CASE NO. 2006 CA 2973

ELECTION CANVASSING COMMISSION
OF THE STATE OF FLORIDA, et al.,

Defendants.

ELLEN FEDDER, et al.,

Plaintiffs,

v.

CASE NO. 2006 CA 2996
(Consolidated)

ELECTIONS CANVASSING COMMISSION, et al.,

Defendants.

**MOTION TO AUTHORIZE THE UNITED STATES
GOVERNMENT ACCOUNTABILITY OFFICE
TO INSPECT AND TEST VOTING EQUIPMENT**

COME NOW Kurt S. Browning, as Secretary of State for the State of Florida, Amy K. Tuck, as Director of the Division of Elections, and the Elections Canvassing Commission, (collectively, the "State Defendants") and moves this Court for a modification of this Court's Order of February 21, 2007 ("Order") that adopted the Stipulation Agreement on Defendant Kathy Dent's Notice and Motion for Authorization, Voter Plaintiffs' Motion for Anti-Spoliation Order and Voter Plaintiffs' Emergency Motion for Preliminary Injunction. In that Order, the Court required Kathy Dent, Supervisor of Elections for Sarasota County (the "Supervisor"), to

set aside and sequester 670 iVotronic voting machines used in the 2006 General Election in Sarasota County, and required that they be maintained in an unaltered condition. As grounds for the modification of that Order herein requested, the State Defendants would show:

1. A total of 1499 iVotronic machines were used in the 2006 General Election.

Pursuant to the Order, 670 iVotronic machines have been sequestered by the Supervisor and remain in the same condition they were in at the time of the November 2006 general election.

2. Dent has utilized some of the non-sequestered iVotronic machines used in the November 2006 General Election for the purposes of conducting local elections in 2007. All of the 1,499 total number of machines used in the 2006 General Election are in Dent's custody.

3. Christine Jennings has initiated proceedings before the US House of Representatives challenging the certified results of the Congressional District 13 election. The House of Representatives has referred the matter to a Task Force of the Committee on House Administration, and that Task Force called upon the U.S. Government Accountability Office ("GAO") to provide technical assistance.

4. Over the past several months, the GAO has reviewed and analyzed materials prepared by others related to the Congressional District 13 race, the subject matter of these consolidated cases. On October 2, 2007 the GAO issued a Report to the Task Force (the "Report"). (See attached Exhibit 1.) The Report recommends that further testing could provide increased assurance that the voting systems used in the Florida Congressional District 13 General Election in Sarasota County did not cause undervotes.

5. To that end, the GAO has proposed to conduct and videotape the following tests upon the voting equipment used in the Sarasota County 2006 Congressional District 13 race:

- a) Conduct firmware testing on a random sample of 115 iVotronic DREs, to be divided between sequestered and nonsequestered machines, to verify that the

firmware in the selected iVotronic machines matches the version certified by the Florida Division of Elections. No more than 60 iVotronic machines, along with associated personal electronic ballots, will be randomly selected from the sequestered machines, and the balance of 115 machines will be randomly selected from the non-sequestered machines. To conduct the firmware tests, the machines will be opened to extract the memory chip that contains the firmware, and commercially available tools will be used to read the contents of the memory chip and compare it to the version certified by the Division of Elections.

- b) On approximately 10 machines randomly selected from both sequestered and non-sequestered machines, conduct ballot testing to confirm the correct operation of the machines. This test will involve initializing the iVotronic machines and using them as they would be used in a scheduled election to record ballots, including the opening and closing of each machine and using the touchscreen and various screen navigation functions, to ensure that votes are recorded properly. The machines will also be intentionally miscalibrated to ascertain the effect of miscalibration on the machine's operation. The iVotronic machines will be miscalibrated during the initialization process. Votes will be cast on the machine after polling is opened on each machine. After the poll is closed on each machine, the votes as displayed on the machine will be verified as properly recorded.

6. The State Defendants are committed to assisting the Task Force created by Congress to review the House District 13 race. The tests set forth by the GAO technical staff are reasonable and will serve the purposes set forth by Congress and the Task Force.

7. No party to this litigation will be prejudiced by the Court granting this Motion.

WHEREFORE, the State Defendants move this Court to enter an Order modifying the Order of February 21, 2007 and authorizing the Supervisor to grant access to the GAO to test the voting machines subject to that Order of February 21, 2007 as outlined in paragraphs 5a) and b) of this Motion.

Respectfully submitted this 8th day of November, 2007.

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GAO

United States Government Accountability Office

Statement before the Task Force on
Florida-13, Committee on House
Administration, House of Representatives

For Release on Delivery
Expected at 4:00 p.m. EDT
Tuesday, October 2, 2007

ELECTIONS

Further Testing Could Provide Increased but Not Absolute Assurance That Voting Systems Did Not Cause Undervotes in Florida's 13th Congressional District

Statement of Dr. Nabajyoti Barkakati
Senior-Level Technologist
Applied Research and Methods





Highlights of GAO-08-97T, a statement before the Task Force on Florida-13, Committee on House Administration, House of Representatives

Why GAO Did This Study

In November 2006, about 18,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District (FL-13). After the contesting of the election results in the House of Representatives, the task force unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. GAO agreed with the task force on an engagement plan, including the following review objectives:

- (1) What voting systems were used in Sarasota County and what processes governed their use?
- (2) What was the scope of the undervote in Sarasota County in the general election?
- (3) What tests were conducted on the voting systems in Sarasota County prior to the general election and what were the results of those tests?
- (4) Considering the voting systems tests conducted after the general election, are additional tests needed to determine whether the voting systems contributed to the undervote?

To conduct its work, GAO met with officials from the State of Florida, Sarasota County, and Election Systems and Software (ES&S)—the voting systems manufacturer—and reviewed voting systems test documentation. GAO analyzed election data to characterize the undervote. On the basis of its assessments of prior testing and other activities, GAO identified potential additional tests for the Sarasota County voting systems.

To view the full product, including the scope and methodology, click on GAO-08-97T. For more information, contact Keith Rhodes at (202) 512-6412 or rhodesk@gao.gov, or Naba Barkakati at (202) 512-4499 or barkakatin@gao.gov.

October 2, 2007

ELECTIONS

Further Testing Could Provide Increased but Not Absolute Assurance That Voting Systems Did Not Cause Undervotes in Florida's 13th Congressional District

What GAO Found

In the 2006 general election, Sarasota County used voting systems manufactured by ES&S, specifically iVotronic direct recording electronic (DRE) voting systems during early and election day voting and the Unity election management system, which handles the election administration functions, such as ballot design and election reporting.

GAO's analysis of the 2006 general election data from Sarasota County did not identify any particular voting machines or machine characteristics that could have caused the large undervote in the FL-13 race. The undervotes in Sarasota County were generally distributed across all machines and precincts.

GAO's analysis found that some of the prior tests and reviews conducted by the State of Florida and Sarasota County provide assurance that certain components of the voting systems in Sarasota County functioned correctly, but they are not enough to provide reasonable assurance that the iVotronic DREs did not contribute to the undervote. Specifically, GAO found that assurance is lacking in three areas, and proposes that tests be conducted to address those areas. First, because there is insufficient assurance that the firmware in all the iVotronic DREs used in the election matched the certified version held by the Florida Division of Elections, GAO proposes that a firmware verification test be conducted on a representative sample of 115 (of the 1,499) machines that were used in the general election. Second, because an insufficient number of ways to select a candidate in the FL-13 race were tested, GAO proposes that a test be conducted to verify all 112 ways that GAO identified to select a candidate. Third, because no prior tests were identified that address the effect of a miscalibrated iVotronic DRE on the undervote, GAO proposes that an iVotronic DRE be deliberately miscalibrated to verify the accurate recording of ballots under these conditions. GAO expects these three tests would take 2 weeks, once the necessary arrangements are made.

Should the task force ask GAO to conduct the proposed tests, several matters would need to be addressed before testing could begin, including obtaining access to the iVotronic DREs that have been subject to a sequestration order, arranging for a test site, obtaining some commercially available test tools, developing test protocols and detailed test procedures, and arranging for the video recording of the tests. Sarasota County election officials have indicated that they can help GAO access the machines and provide a test site between November 26 and December 7, 2007.

Although the proposed tests could help provide increased assurance, they would not provide absolute assurance that the iVotronic DREs did not cause the large undervote in Sarasota County. The successful conduct of the proposed tests could reduce the possibility that the voting systems caused the undervote and shift attention to the possibilities that the undervote was the result of intentional actions by voters or voters that did not properly cast their votes on the voting system.

Mr. Chairman and Members of the Task Force:

I am pleased to appear before the task force today to present the findings on our review of voting equipment used in Florida's 13th Congressional District (Florida-13), which we are conducting in response to your request of May 25, 2007.

In November 2006, about 18,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District.¹ Following the contesting of the election results in the House of Representatives, the task force met and unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. On June 14, 2007, we met with the task force and agreed upon an engagement plan, which included the following review objectives:

(1) What voting systems and equipment were used in Sarasota County and what processes governed their use? (2) What was the scope of the undervote in Sarasota County in the general election? (3) To what extent were tests conducted on the voting systems in Sarasota County prior to the general election and what were the results of those tests? (4) Considering the tests that were conducted on the voting systems from Sarasota County after the general election, are additional tests needed to determine whether the voting systems contributed to the undervote?

To conduct our work, we met with officials from the Sarasota County Supervisor of Elections, the Florida Department of State and Division of Elections, and Election Systems and Software (ES&S), the manufacturer of the voting systems used in Sarasota County. We reviewed voting system documentation, including standards documents, audit and testing documentation, submissions from the contestant and contestee, and selected Florida election laws and rules. In Sarasota County, election officials demonstrated how the ES&S voting system was used to support the 2006 general election. To determine the scope of the undervote in Sarasota County, we collected election data from the Supervisor of Elections and analyzed it to determine whether the undervote could be attributed to particular voting machines or machine characteristics. Specifically, we examined ballot image logs and event logs from the voting systems and technician and incident reports generated by elections staff

¹Undervotes occur when the number of choices selected by the voter is fewer than the maximum allowed for that contest. In this case, it means ballots that did not record a selection for either candidate in the congressional contest.

from Sarasota County on election day. We also conducted various statistical analyses to characterize the undervote and to identify whether a subset of machines or precincts may have caused the large undervote.

We reviewed test documentation and interviewed officials involved with testing from ES&S, the Florida Division of Elections, and the Sarasota County Supervisor of Elections. To determine the need for additional tests, we also reviewed the tests conducted following the election, including those conducted or sponsored by the Florida Division of Elections, including the parallel testing, the examination of Sarasota County's election procedures and practices, and the source code review conducted at Florida State University's Security and Assurance in Information Technology (SAIT) laboratory. We reviewed the final reports of these tests and also met with the leader of the source code review team. Following the agreement to and execution of a non-disclosure agreement with the Florida Department of State and ES&S, we obtained access to the iVotronic source code and reviewed it to further our understanding of the system and to verify some of the source code review's findings. We analyzed the available information and identified a key set of voting system objectives that, if implemented properly, would provide reasonable assurance that the voting systems did not malfunction and cause the large undervote in Sarasota County. Using these objectives, we used the results of testing previously conducted and assessed the extent to which these key voting system objectives could be met. For those objectives that could not be adequately assured, we assessed the significance of those objectives and identified tests that could be conducted to help try to assure those key voting system objectives were met. For each test, we identified resources that would be required, including time and manpower.

We provided a draft of this report to the Florida Department of State, ES&S, and the Sarasota County Supervisor of Elections for their review and comments. The Florida Department of State and ES&S also conducted a sensitivity review to ensure that business proprietary information is not disclosed in this statement.

We conducted our work from June to September 2007 in Washington, D.C.; Tallahassee and Sarasota, Florida; and Omaha, Nebraska.

Results in Brief

In the 2006 general election, Sarasota County used voting systems manufactured by ES&S, specifically iVotronic direct recording electronic (DRE) voting systems during early and election day voting and the Unity

election management system, which handles the election administration functions, such as ballot design and election reporting.

Our independent analysis of the 2006 general election data from Sarasota County confirmed the large undervote in the race for Florida's 13th Congressional District, but did not identify any particular voting machines or machine characteristics that could have caused the large undervote in the election. The undervotes in Sarasota County for the congressional race were generally distributed across all machines and precincts.

We found that some of the prior tests and reviews provide assurance that the voting systems in Sarasota County functioned correctly, but they are not enough to provide reasonable assurance that the iVotronic DRE voting systems did not contribute to the undervote. For example, prior reviews provide reasonable assurance that the Unity election management system did not contribute to the undervote, and the votes captured by iVotronic DREs at the precincts match the voter count from precinct records within acceptable margins of error.

Portions of the Florida state audit, such as the firmware comparison and parallel tests, provided useful information, but the results could not be applied to all the iVotronic DREs used in the election because the number of machines tested was too small. Additionally, the machines were not tested for all different ways a voter can select a candidate in the congressional race. We also did not find any prior testing that would help us understand the effects of a miscalibrated touch screen. To address these issues, we propose that (1) a firmware verification test, (2) a ballot test, and (3) a calibration test be conducted to try to obtain further assurance that the iVotronic DREs used in Sarasota County during the 2006 general election did not cause the undervote. The firmware verification test would compare the firmware in a representative sample of iVotronic DREs with the certified version of firmware. The ballot test would exercise 112 ways to select a candidate on 10 iVotronic DREs. The calibration test would deliberately miscalibrate an iVotronic DRE that uses the certified software and verify the functioning of the machine. We expect the testing would take 2 weeks using a staff of about 6 to 8 people, once the necessary arrangements have been made. Although the proposed tests would provide increased assurance, they would not conclusively eliminate the machines as a cause of the undervote.

Before commencing the testing, we would need to obtain access to the iVotronic DREs that have been subject to a sequestration order in the state court system of Florida, arrange for a test site, obtain some commercially

available software and hardware for the firmware comparison test, develop test protocols and detailed test procedures, and arrange for video recording of the test. Sarasota County election officials have indicated that working around the county's election schedules, they could help us access the machines and provide a test site between November 26 and December 7, 2007.

Our proposed tests could help reduce the possibility that the undervote was caused by the iVotronic DREs. However, even after completing the tests, we would not have absolute assurance that the iVotronic DREs did not play any role in the large undervote. Absolute assurance is impossible to achieve because we are unable to recreate the conditions of the election in which the undervote occurred. By successfully conducting the proposed tests, we could reduce the possibility that the iVotronic DREs were the cause of the undervote and shift attention to the possibilities that the undervote was the result of intentional actions by the voter or voters that did not properly cast their votes on the voting system.

Draft copies of this statement were provided to the Secretary of State of Florida, the Supervisor of Elections of Sarasota County, and ES&S for their review and comment. The Florida Department of State provided technical comments, which we incorporated. The Sarasota County Supervisor of Elections did not provide us comments.

In its comments, ES&S stated that it believes that the collective results of prior testing have demonstrated that the voting systems worked properly in Florida's 13th Congressional District race, and that the focus should be on testing the effect of the ballot display on the undervote. We disagree that the prior test results adequately demonstrate that the voting systems could not have contributed to the undervote. Our analysis identified three areas where further testing could provide increased assurance that the undervote was not caused by the voting systems. We agree with ES&S that the large undervote in Florida's 13th Congressional District race could have been caused by voters who intentionally undervoted or voters who did not properly cast their ballots, potentially because of issues related to the human interaction with the ballot. However, our review focused on whether the voting systems could have contributed to the large undervote. ES&S also provided technical comments, which we incorporated as appropriate.

Background

The 13th Congressional District of Florida comprises DeSoto, Hardee, Sarasota, and parts of Charlotte and Manatee Counties. In the November 2006 general election, there were two candidates in the race to represent the 13th Congressional District: Vern Buchanan, the Republican candidate, and Christine Jennings, the Democratic candidate. The State of Florida certified Vern Buchanan the winner of the election. The margin of victory was 369 votes out of a total of 238,249 votes counted. Table 1 summarizes the results of the election and shows that the results from Sarasota County exhibited a significantly higher undervote rate than in the other counties in the congressional district.

Table 1: Results from 2006 General Election for Florida Congressional District 13

County	Buchanan	Jennings	Undervotes	Total ballots cast	Percentage undervote
Charlotte	4,460	4,277	225	8,962	2.51
DeSoto	3,471	3,058	142	6,672	2.13
Hardee	2,629	1,686	269	4,584	5.87
Manatee	50,117	44,432	2,274	96,828	2.35
Sarasota	58,632	65,487	18,412	142,532	12.92
Total	119,309	118,940	21,322	238,249	

Source: GAO analysis of Florida Division of Elections, Charlotte County, DeSoto County, Hardee County, Manatee County, and Sarasota County data.

Note: Numbers do not add up because of overvotes – where voters select more than the maximum number of candidates allowed in a race; in this case, a ballot that had votes for both Buchanan and Jennings.

In Florida, the Division of Elections in the Secretary of State's office helps the Secretary carry out his or her responsibilities as the chief election officer. The Division of Elections is responsible for establishing rules governing the use of voting systems in Florida. Voting systems cannot be used in any county in Florida until the Florida Division of Elections has issued a certification of the voting system's compliance with the Florida Voting System Standards.² The Florida Voting Systems Certification program is administered by the Bureau of Voting Systems Certification in the Division of Elections.

²Florida Department of State, *Florida Voting System Standards*, Form DS-DE 101 (Jan. 12, 2005).

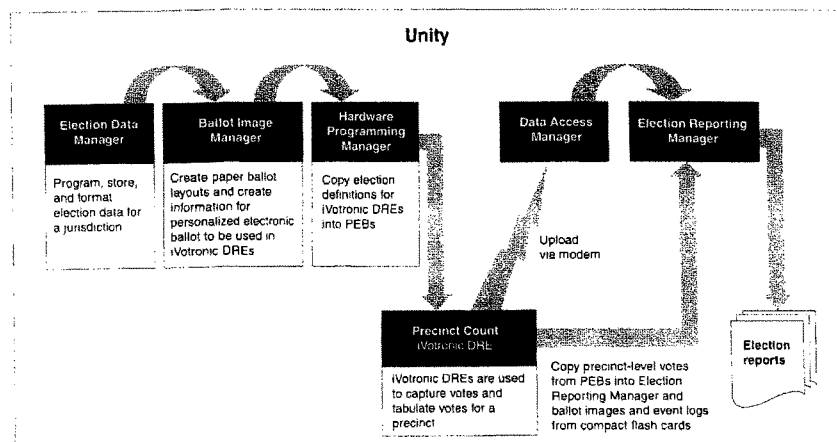
An elected supervisor of elections is responsible for implementing elections in each county in Florida in accordance with Florida election laws and rules. The supervisor of elections is responsible for the purchase and maintenance of the voting systems as well the preparation and use of the voting systems to conduct each election.

**Sarasota County Used
ES&S Voting Systems
in 2006 General
Elections**

In the 2006 general election, Sarasota County used voting systems manufactured by ES&S. The State of Florida has certified different versions of ES&S voting systems. The version used in Sarasota County was designated ES&S Voting System Release 4.5, Version 2, Revision 2, and consisted of iVotronic DREs, a Model 650 central count optical scan tabulator for absentee ballots, and the Unity election management system. It was certified by the State of Florida on July 17, 2006. The certified system includes different configurations and optional elements, several of which were not used in Sarasota County.

The election management part of the voting system is called Unity; the version that was used was 2.4.4.2. Figure 1 shows the overall election operation using the Unity election management system and the iVotronic DRE.

Figure 1: Overview of Election Operation Using the Unity Election Management System and iVotronic DRE

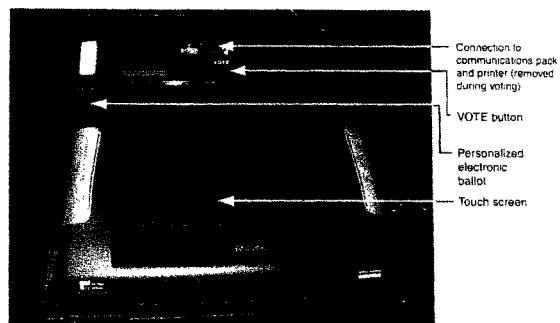


Source: GAO.

Sarasota County used iVotronic DREs for early and election day voting. Specifically, Sarasota County used the 12-inch iVotronic DRE, hardware version 1.1 with firmware version 8.0.1.2.³ Some of the iVotronic DREs are configured with Americans with Disabilities Act (ADA) functionality, which includes the use of audio ballots. The iVotronic DRE uses a touch screen—a pressure-sensitive graphics display panel—to display and record votes (see fig. 2).

³The certified version of ES&S Voting System Release 4.5, Version 2, Revision 2, specifies the use of iVotronic hardware version 1.0. According to Florida Division of Election officials, hardware version 1.1 of the iVotronic DRE has been available since at least 2004 and should have been included as a part of the certification for ES&S Voting System Release 4.5, Version 2, Revision 2. According to ES&S officials, iVotronic firmware version 8.0.1.2 runs in exactly the same manner on hardware versions 1.0 and 1.1.

Figure 2: The iVotronic DRE Voting System and Its Components.



Source: GAO

The machine has a storage case that also serves as the voting booth. The operation of the iVotronic DRE requires using a personalized electronic ballot (PEB), which is a storage device with an infrared window used for transmission of ballot data to and from the iVotronic DRE. The iVotronic DRE has four independent flash memory modules, one of which contains the program code—firmware—that runs the machine and the remaining three flash memory modules store redundant copies of ballot definitions, machine configuration information, ballots cast by voters, and event logs. The iVotronic DRE includes a VOTE button that the voter has to press to cast a ballot and record the information in the flash memory. The iVotronic DRE also includes a compact flash card that can be used to load sound files onto iVotronic DREs with ADA functionality. The iVotronic DRE's firmware can be updated through the compact flash card. Additionally, at the end of polling, the ballots and audit information are to be copied from the internal flash memory module to the compact flash card.

To use the iVotronic DRE for voting, a poll worker activates the iVotronic DRE by inserting a PEB into the PEB slot after the voter has signed in at the polling place. After the poll worker makes selections so that the appropriate ballot will appear, the PEB is removed and the voter is ready to begin using the system. The ballot is presented to the voter in a series of

display screens, with candidate information on the left side of the screen and selection boxes on the right side (see fig. 3).

Figure 3: Second Ballot Page Showing the Congressional and Gubernatorial Races in Sarasota County's 2006 General Election

U.S. REPRESENTATIVE IN CONGRESS 13TH CONGRESSIONAL DISTRICT (Vote for One)		
Vern Buchanan	REP	<input type="checkbox"/>
Christine Jennings	DEM	<input type="checkbox"/>

STATE GOVERNOR AND LIEUTENANT GOVERNOR (Vote for One)		
Charlie Crist	REP	<input type="checkbox"/>
Jeff Kotkamp	DEM	<input type="checkbox"/>
Jim Davis	DEM	<input type="checkbox"/>
Meryl L. Jones	REP	<input type="checkbox"/>
Max Linn	DEM	<input type="checkbox"/>
Tom Macklin	DEM	<input type="checkbox"/>
Richard Paul Dembinsky	REP	<input type="checkbox"/>
Dr. Joe Smith	DEM	<input type="checkbox"/>
John Wayne Smith	DEM	<input type="checkbox"/>
James J. Kearney	DEM	<input type="checkbox"/>
Karl C.C. Behm	DEM	<input type="checkbox"/>
Carol Castagnero	DEM	<input type="checkbox"/>
Write-In		<input type="checkbox"/>

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Source: Sarasota County Supervisor of Elections

The voter can make a selection by touching anywhere on the line, and the iVotronic DRE responds by highlighting the entire line and displaying an X in the box next to the candidate's name. The voter can also change his or her selection by touching the line corresponding to another candidate or by deselecting his or her choice. "Previous Page" and "Next Page" buttons are used to navigate the multipage ballot. After completing all selections, the voter is presented with a summary screen with all of his or her selections (see fig. 4). From the summary screen, the voter can change any selection by selecting the race. The race will be displayed to the voter on its own ballot page. When the voter is satisfied with the selections and has reached the final summary screen, the red VOTE button is illuminated, indicating the voter can now cast his or her ballot. When the VOTE button is pressed, the voting session is complete and the ballot is recorded on the iVotronic DRE. In Sarasota County's 2006 general election, there were nine different ballot styles with between 28 and 40 races, which required

between 15 and 21 electronic ballot pages to display, and 3 to 4 summary pages for review purposes.

Figure 4: First Summary Page in Sarasota County's 2006 General Election

Instructions	
Return to any contest by touching the contest title. To cast your ballot now, press the Vote button.	
UNITED STATES SENATOR..... No Selection Made	STATE REPRESENTATIVE..... No Selection Made
U.S. REPRESENTATIVE IN CONGR..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
GOVERNOR AND LIEUTENANT GOV..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
ATTORNEY GENERAL..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
CHIEF FINANCIAL OFFICER..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
COMMISSIONER OF AGRICULTURE..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made

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Source: Sarasota County Supervisor of Elections.

Analysis of Election Data Shows that Undervote Was Distributed across All Machines and Precincts

Our analysis of the 2006 general election data from Sarasota County does not identify any particular voting machines or machine characteristics that could have caused the large undervote in Florida's 13th Congressional District race. The undervotes in Sarasota County for the congressional race were generally distributed across all machines and precincts. Using voting system data that we obtained from Sarasota County, we found that 1,499 iVotronic DREs recorded votes in the 2006 general election; 84 iVotronic DREs recorded votes during early voting, and 1,415 iVotronic DREs recorded votes on election day.⁴ Using these data, we verified that the vote counts for the contestant, contestee, and undervotes match the reported vote totals for Sarasota County in Florida's 13th Congressional District race. As can be seen in table 2, the undervote rate in early voting was significantly higher than in election day voting.⁵

Table 2: Undervotes in Florida's 13th Congressional District Race during Early and Election Day Voting

	All voters	Early voters	Election day voters
Machines	1,499	84	1,415
Ballots cast	119,919	30,877	89,042
Undervotes	17,846	5,445	12,401
Undervote rate	14.88%	17.63%	13.93%

Source: GAO analysis of Sarasota County data.

The range of the undervote rate for all machines was between 0 and 49 percent, with an average undervote rate of 14.3 percent. When just the early voting machines are considered, the undervote rate ranged between 5 and 28 percent. The largest number of undervotes cast on any one machine on election day was 39. While the range of ballots cast on any one machine on election day was between 1 and 121, the median number of

⁴Election day voting is the casting of ballots on election day at polling places. Absentee and early voting are programs that permit eligible persons to vote prior to election day. Absentee voting is conducted by mail in advance of election day and early voting is generally in-person voting in advance of election day at specific polling locations.

⁵Early and election day ballots include provisional ballots cast during those respective stages of voting and included in the vote totals. 160 provisional ballots were included in the vote totals. 37 provisional ballots were excluded.

Because the absentee ballots were not cast using iVotronic voting systems, we did not verify the absentee ballot counts. When absentee ballots are included, a total of 142,532 ballots were cast and a total of 18,412 undervotes were recorded.

ballots cast on any one machine was 66. The range of undervote rate by precinct was between 0 and 41 percent, and the average undervote by precinct was about 14.8 percent.

Prior Tests and Reviews Provide Some Assurance, but Do Not Provide Reasonable Assurance That the iVotronic DREs Did Not Contribute to the Undervote

Prior to the elections, Sarasota County's voting systems were subjected to several different tests that included testing by the manufacturer, certification testing by the Florida Division of Elections, testing by independent testing authorities, and logic and accuracy testing by Sarasota County's Supervisor of Elections. After the 2006 general election, an audit of Sarasota County's election was conducted by the State of Florida that included a review of the iVotronic source code, parallel tests, and an examination of Sarasota County's election procedures. Although these tests and reviews provide some assurance, as do certain controls that were in place during the election, that the voting systems in Sarasota County functioned correctly, they do not provide reasonable assurance that the iVotronic DREs did not contribute to the undervote.

Prior Tests and Reviews of Sarasota County's Voting Systems Provide Useful Information, but Have Some Shortcomings

According to ES&S officials, ES&S tested the version of the iVotronic DRE that was used in Sarasota County in 2001-2002, but they could not provide us documentation for those tests because the documentation had not been retained.

The Florida Division of Elections conducted certification testing of the iVotronic DRE and the Unity election management system before Sarasota County acquired the system from the manufacturer. The certification process included tests of the election management system and the conduct of mock primary and general elections on the entire voting system. ES&S Voting System, Release 4.5, Version 2, Revision 2, was certified by the Florida Division of Elections on July 17, 2006. According to Florida Division of Elections officials, testing of each version focuses on the new components, and components that were included in prior versions are not as vigorously tested. The 8.0.1.2 version of the iVotronic firmware was first tested as a part of ES&S Release 4.5, Version 1, which was certified in 2005. Version 2 introduced version 2.4.4.2 of the Unity Election Management System, which was certified in August 2005. Certification testing was conducted on software that was received from an independent test authority, who witnessed the building of the firmware from the source code. An independent test authority also conducted environmental testing

of the iVotronic DRE in 2001 that was relied upon by the Florida Division of Elections for certification.

A logic and accuracy test was conducted by Sarasota County on October 20, 2006, on 32 iVotronic DREs, and it successfully verified that all ballot positions on all nine ballot styles could be properly recorded. In addition, the use of a provisional ballot and audio ballot were tested, as well as machines configured for early voting with all nine ballot styles.

After the 2006 general election, the Florida Division of Elections conducted an audit of Sarasota County's 2006 general election that included two parallel tests, an examination of the certified voting system and conduct of election by Sarasota County's elections office, and an independent review of the iVotronic DRE firmware's source code. After the conduct of this audit, the audit team concluded that there was no evidence that suggested the official election results were in error or that the voting systems contributed to the undervote in Sarasota County.⁶ The parallel tests were performed using 10 iVotronic DREs—5 used in the 2006 general election and 5 that were not used. Four of the machines in each test replicated the votes cast on four election day iVotronic DREs. The fifth machine in each test used an ad hoc test script that involved picking a random vote pattern along with a specific vote selection pattern picked from 10 predetermined vote patterns for the 13th Congressional District for each ballot cast. The audit report asserts that testing a total of 10 machines is more than adequate to identify any machine problems or irregularities that could have contributed to undervotes in the Florida-13 race. However, we concluded that the results from the testing of 10 machines cannot be applied to all 1,499 iVotronic DREs used during the 2006 general election because the sample was not random and the sample size was too small.

In examining whether voting systems that were used in Sarasota County matched the systems that were certified by the Florida Division of Elections, the Florida audit team examined the Unity election management system and the firmware installed on six iVotronic DREs. The audit team confirmed that the software running on the Unity election management

⁶Florida Department of State, *Audit Report of the Election Systems and Software, Inc.'s, iVotronic Voting System in the 2006 General Election for Sarasota County, Florida* (Tallahassee, Florida: Feb. 2007), and Security and Assurance in Information Technology Laboratory, Florida State University, *Software Review and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware* (Tallahassee, Florida: Feb. 23, 2007).

system and the firmware in the six iVotronic DREs matched the certified versions held in escrow by the Florida Division of Elections. On the basis of its review, the audit team concluded that there is no evidence to indicate that the iVotronic DREs had been compromised or changed. We agree that the test verifies that those six machines were not changed, but any extrapolation beyond this cannot be statistically justified because the size of the sample is too small. Therefore, these tests cannot be used to obtain reasonable assurance that the 1,499 machines used in the general election used the certified firmware.

A software review and security analysis of the iVotronic firmware version 8.0.1.2 was conducted by a team led by Florida State University's SALT Laboratory. The eight experts in the software review team attempted to confirm or refute many different hypotheses that, if true, might explain the undervote in the race for the 13th Congressional District. In doing so, they made several observations about the code, which we were able to independently verify. The software review and our verification of the observations were helpful, but a key shortcoming was the lack of assurance whether the source code reviewed by the SALT team or by us, if compiled, would correspond to the iVotronic firmware that was used in Sarasota County for the 2006 election. According to ES&S and Florida Division of Elections officials, in May 2005 an independent testing authority witnessed the process of compiling the source code and building the version of firmware that was eventually certified by the Florida Division of Elections. According to ES&S officials, if necessary, ES&S can recreate the firmware from the source code, but the firmware would not be exactly identical to the firmware certified by the Florida Division of Elections because the embedded date and time stamp in the firmware would be different.

The software review team also looked for security vulnerabilities in software that could have been exploited to cause the undervote. Although the team found several software vulnerabilities, the team concluded that none of them were exploited in Sarasota in a way that would have contributed to the undervote. We did not independently verify the team's conclusion.

**Reasonable Assurance of
Some Voting System
Objectives Has Been
Achieved**

The Unity election management system and the iVotronic DREs are the major voting system components that may require testing to determine whether they contributed to the large undervote in Sarasota County. Our review of tests already conducted and documentation from the election provide us reasonable assurance that the key functions of the Unity

election management system—election definition and vote tabulation—did not contribute to the undervote. The election definitions created using the Unity election management system are tested during logic and accuracy testing to demonstrate that they include all races, candidates, and issues and that each of the items can be selected by a voter. The votes tabulated on the iVotronic DRE at each precinct matched the data uploaded to the Unity election management system, and the totals from the precinct results tapes agree with that obtained by Unity. Further, the state audit confirmed that the Unity election management system software running in Sarasota County matched the escrowed version certified by the Florida Division of Elections.

We have reasonable assurance that the number of ballots recorded by the iVotronic DREs is correct because this number is very close to the number of people recorded on the precinct registers as showing up at the polling places to vote either during early voting or on election day. This assurance also allows us to conclude that issues, such as votes cast by “fleeing voters”—votes that are cast by poll workers for voters who leave the polling place before pressing the button to cast the vote—and the potential loss of votes during a system shutdown, did not affect the undervote in this election. If these issues had occurred, they would have caused a discrepancy between the number of voters who sign in at the polling place to vote and the public counts recorded on the iVotronic DREs.

We have reasonable assurance that provisional ballots were appropriately handled by the iVotronic DREs and the Unity election management system. We also verified that during the Florida certification test process, the Division of Elections relied on successful environmental and shock testing conducted by an independent test authority.

**Reasonable Assurance
That All iVotronic DREs
Used in the 2006 General
Election Used Software
Certified by the Florida
Division of Elections Is
Lacking**

We found that prior testing and activities do not provide reasonable assurance that all iVotronic DREs used in Sarasota County on election day were using the hardware and firmware certified for use by the Florida Division of Elections. Sarasota County has records indicating that only certified versions were procured from ES&S, and the firmware version is checked in an election on the zero and results tapes. However, because there was no independent validation of the system versions, we cannot conclude that no modifications were made to the systems that would have likely made them inconsistent with the certified version. As we previously mentioned, the firmware comparison of only 6 iVotronic DREs in the state audit is insufficient to support generalization to all 1,499 iVotronic DREs that recorded votes during the election. Without reasonable assurance that

all iVotronic DREs are running the same certified firmware, it is difficult for us to rely on the results of other testing that has been conducted, such as the parallel tests or the logic and accuracy tests.

The Ability of Voters to Make Selections in Different Ways and Have Their Votes Properly Recorded Has Not Been Fully Tested

Prior testing of the iVotronic DREs only verified 13 of the 112 ways that we identified that a voter may use to select a candidate in Florida's 13th Congressional District race. Specifically, on an iVotronic DRE, a voter could (1) initially select either candidate or neither candidate (i.e. undervote), (2) change the vote on the initial screen, and (3) use a combination of page back and review screen options to change or verify his or her selection before casting the ballot. By taking into account these variations, our analysis has found at least 112 different ways a voter could make his or her selection in Florida's 13th Congressional District race, assuming that it was the only race on the ballot. Out of 112 different ways to select a candidate in the congressional race, Florida certification tests and the Sarasota County logic and accuracy tests verified 3 ways to select a candidate; and the Florida parallel tests verified 10 ways to select a candidate—meaning that of the 112 ways, 13 have been tested. By not verifying these different ways to select a candidate, we do not have reasonable assurance that the system will properly handle expected forms of voter behavior.

The Effect of Miscalibrated iVotronic DREs Is Unclear

During the setup of the iVotronic DRE, sometimes referred to as the clear and test process, the touch screens are calibrated by using a stylus to touch the screen at 20 different locations. The calibration process is designed to align the display screen with the touch screen input. It has been reported that a miscalibrated machine could affect the selection process by highlighting a candidate that is not aligned with what the voter selected. We identified two reported cases on election day where the miscalibration of the iVotronic DRE led to its closure and discontinued use for the rest of the day. While a miscalibrated machine could certainly make an iVotronic DRE harder to use, it is not clear it would have helped to contribute to the undervote. We did not identify any prior testing or activities that would help us understand the effect of a miscalibrated iVotronic DRE on the undervote.

Further Tests Could Provide Increased but Not Absolute Assurance That the iVotronic DREs Used in the Election Did Not Cause the Undervote

On the basis of our analysis of all prior test and audit activities, we propose that a firmware verification test, a ballot test, and a calibration test be conducted to try to obtain increased assurance that the iVotronic DREs used in Sarasota County during the 2006 general election did not cause the undervote.

We propose that the firmware verification testing be started first, once the necessary arrangements have been made, such as access to the needed machines and the development of test protocols and detailed test procedures. Once we have reasonable assurance that the iVotronic DREs are running the same certified firmware, we could conduct the ballot test and calibration test on a small number of machines to determine whether it is likely the machines accurately recorded and counted the ballots. If the firmware verification tests are successfully conducted, we would have much more confidence that the iVotronic DREs will behave similarly when tested. If there are differences in the firmware running on the iVotronic DREs, we would need to reassess the number of machines that need to be tested for ballot testing and calibration testing in order for us to have confidence that the test results would be true for all 1,499 iVotronic DREs used during the election. In other words, if we are reasonably confident that the same software is used in all 1,499 machines, then we are more confident that the results of the other tests on a small number of machines can be used to obtain increased assurance that the iVotronic DREs did not cause the undervote. Although the proposed tests would provide increased assurance, they would not conclusively eliminate the machines as a cause of the undervote.

Conduct Firmware Testing to Verify That the Firmware in the iVotronic DREs Used in Sarasota County Matches the Certified Version

We propose to conduct a firmware verification test using a statistical sampling approach that can provide reasonable assurance that all 1,499 iVotronic DREs are running the certified version of firmware. The exact number of machines that would be tested depends on the confidence level desired and how much error can be tolerated. We propose drawing a representative sample from all the iVotronic DREs that recorded votes in the general election. With a sample size of 115 iVotronic DREs, which would be divided between sequestered and nonsequestered machines, and assuming that there are no test failures, we would be able to conclude with a 99 percent confidence level that no more than 4 percent of the 1,499 iVotronic DREs used in the election were using uncertified firmware.

We suggest a test approach similar to what was used by the Florida Division of Elections when it verified the firmware for 6 iVotronic DREs.

We estimate that the firmware testing for 115 machines could be conducted in about 5 to 7 days and would require about 5 or 6 people, once the necessary arrangements have been made. The machines would be transported to a test facility specified by Sarasota County election officials where we could perform the test. The activities involved in conducting a firmware validation test would include locating and retrieving the selected iVotronic DRE from the storage facility, transporting it to the test facility, opening the DRE, extracting the chip with the firmware, reading the contents of the chip using a specialized chip reader, and conducting a comparison between the contents and the certified firmware to determine if any differences exist. To conduct this test, we would need commercially available specialized hardware and software similar to that used by the Florida Division of Elections in its firmware comparison test.

**Conduct Ballot Testing of
iVotronic DREs to Confirm
Correct Operation**

We propose conducting ballot testing on 10 iVotronic DREs, each configured with one of the nine different ballot styles, with the 10th machine configured as an early voting machine with all nine ballot styles. We would test 112 ways to select a candidate on the early voting machine. On the election day machines, we would test the 112 different ways distributed across the 9 machines in a random manner, meaning each machine would on average record 12-13 ballots. Assuming that (1) reasonable assurance is obtained that all iVotronic DREs used during the election were using the same certified firmware, and (2) we found no failures during the ballot testing, this testing would provide increased assurance that the iVotronic DREs used during the election, both in early voting and in election day voting, were able to accurately record and count ballots when using any of the 112 ways to select a candidate in the Florida-13 race.

We would plan to code each ballot by including an identifier in the write-in candidate field for either the U.S. senator or governor's race. Using this write-in coding, we could examine the ballot image and confirm that each ballot was accurately recorded and counted by the iVotronic DRE. Any encountered failures would also be more rapidly attributed to a specific test case, and we would be able to more readily repeat the test case to determine if we have a repeatable condition. Testing 112 ways to select a candidate on a single machine would also provide us some additional assurance that the volume of ballots cast on election day did not cause a problem. We note that casting 112 ballots on a single machine is more than that cast on over 99 percent of the 1,415 machines used on election day.

We estimate the ballot testing would take about 2 to 3 days and require the equivalent of 2 people, once the necessary arrangements have been made.

Deliberately Miscalibrate an iVotronic DRE to Understand the Effect on the Undervote

Because little is known about the effect of a miscalibrated machine on the behavior of an iVotronic DRE, we propose to deliberately miscalibrate an iVotronic DRE and verify the functioning of the machine. We propose to identify different ways to miscalibrate a ballot and to test ballots on the miscalibrated iVotronic DRE to verify that it still properly records votes. With this test we would confirm whether (1) the review screen displays the same selection in the Florida-13 race as was highlighted in the selection screen, and (2) that the vote is recorded as it was displayed on the review screen. Again, we would plan to use the write-in candidate option to verify the proper recording of the ballot. This test would demonstrate whether the system correctly records a vote for the race and hence whether it contributed to the undervote. We estimate that the calibration test could be completed in about 1 day by 2 people, once the necessary arrangements have been made.

Several Matters Remain to Be Addressed to Conduct Further Testing

Should the task force ask us to conduct the proposed testing, we want to make the task force aware of several other matters that would need to be addressed before we could begin testing. These activities would require some time and resources to complete before testing could commence.

First, we would need to gain access to iVotronic DREs that have been subject to a sequestration order in the state court system of Florida. If we do not have access to the needed machines, we would be unable to obtain reasonable assurance that the machines used on election day were using certified software, and without this assurance, the results from prior tests and any results of our ballot and calibration tests would be less meaningful because we would be unable to apply the results to all 1,499 iVotronic DREs used during the election. Second, we would need to agree upon an appropriate facility for the tests. Sarasota County Supervisor of Elections has indicated that we can use its warehouse space, but because of upcoming elections in November and January, the only time the election officials would be able to provide us this space and the necessary support is between November 26 and December 7, 2007. If testing cannot be completed during this time period, Sarasota County officials stated that they would not be able to assist us until February 2008. Third, some tests may require commercially available specialized software, hardware, or other tools to conduct the tests. We would need to make arrangements to either borrow or to purchase such testing tools before

commencing testing. Fourth, in order to conduct any tests, we would need to develop test protocols and detailed test procedures and steps. We also anticipate that we would need to conduct a dry run, or dress rehearsal, of our test procedures to ensure that our test tools function properly and that our time estimates are reasonable. Finally, we would need to make arrangements for video recording of our testing. It would be our preference to have a visual record of the tests to document the actual test conduct and to facilitate certain types of test analysis.

Other Observations on Touch Screen Voting Systems

We recognize that human interaction with the ballot layout could be a potential cause of the undervote. Although we have not explored this issue in our review, we note that there is an ongoing academic study that is exploring this issue using voting machines obtained from ES&S. We believe that such experiments could be useful and could provide insight into the ballot layout issue.

During our review, we noted that several suggestions have been offered as possible ways to establish that voters are intentionally undervoting and to provide some assurance that the voting systems did not cause the undervote. First, a voter-verified paper trail could provide an independent confirmation that the touch screen voting systems did not malfunction in recording and counting the votes from the election. The paper trail would reflect the voter's selections and, if necessary, could be used in the counting or recounting of votes. This issue is recognized in the Florida State University SALT source code review as well as the 2005 and draft 2007 Voluntary Voting Systems Guidelines prepared for the Election Assistance Commission. We have previously reported on the need to implement such a function properly.⁷ Second, explicit feedback to voters that a race has been undervoted and a prompt for voters to affirm their intent to undervote might help prevent many voters from unintentionally undervoting a race. On the iVotronic DREs, such feedback and prompts are provided only when the voter attempts to cast a completely blank ballot, but not when a voter undervotes in individual races. Third, offering a "none of the above" option in a race would provide voters with the opportunity to indicate that they are intentionally undervoting. The State of Nevada provides this option in certain races in its elections. Decisions

⁷GAO, *Elections: Federal Efforts to Improve Security and Reliability of Electronic Voting Systems Are Under Way, but Key Activities Need to Be Completed*, GAO-05-956 (Washington, D.C.: Sept. 21, 2005).

about these or other suggestions about ballot layout or voting system functions should be informed by human factors studies that assess their effectiveness in accurately recording voters' preferences, making voting systems easier to use, and preventing unintentional undervotes.

Conclusions

The high undervote encountered in Sarasota County in the 2006 election for Florida's 13th Congressional District has raised questions about whether the voting systems accurately recorded and counted the votes cast by eligible voters. Other possible reasons for the undervote could be that voters intentionally undervoted or voters did not properly cast their ballots on the voting systems, potentially because of issues relating to the interaction between voters and the ballot. The focus of our review has been to determine whether the voting systems—the iVotronic DREs, in particular—contributed to the undervote. We found that the prior reviews of Sarasota County's 2006 general election have provided valuable information about the voting systems. Our review found that in some cases we were able to rely on this information to eliminate areas of concern. This allowed us to identify the areas where increased assurances were needed to answer the questions being raised. Accordingly, the primary focus of the tests we are proposing is to obtain increased assurance that the results of the prior reviews and our proposed testing can be applied to all the iVotronic DREs used in the election. Our proposed tests involving the firmware comparison, ballot testing, and calibration testing could help reduce the possibility that the undervote was caused by the iVotronic DREs. However, even after completing the tests, we would not have absolute assurance that the iVotronic DREs did not play any role in the large undervote. Absolute assurance is impossible to achieve because we are unable to recreate the conditions of the election in which the undervote occurred. By successfully conducting the proposed tests, we could reduce the possibility that the iVotronic DREs were the cause of the undervote and shift attention to the possibilities that the undervote was the result of intentional actions by the voter or voters that did not properly cast their votes on the voting system.

Comments and Our Evaluation

We provided draft copies of this statement to the Secretary of State of Florida, the Supervisor of Elections of Sarasota County, and ES&S for review and comment. The Florida Department of State provided technical comments, which we incorporated. The Sarasota County Supervisor of Elections appreciated the opportunity to review the draft, but provided us no comments.

In its comments, ES&S stated that it believes that the collective results of testing already conducted on the Sarasota County voting systems have demonstrated that they performed properly and as they were designed to function and that all votes were accurately captured and counted as cast in Florida's 13th Congressional District race. Further, ES&S asserts that tests and analyses should be conducted to examine the effect of the ballot display on the undervote, which it believes is the most probable cause of the undervote.

We disagree that the collective results of testing already conducted on the Sarasota County voting systems adequately demonstrate that the voting systems could not have contributed to the undervote in the Florida-13 race. First, as we have cited, we do not have adequate assurance that all the iVotronic DREs used in Sarasota County used the firmware certified by the Florida Division of Elections. Without this assurance, it is difficult for us to apply the results from the other tests to all 1,499 machines that recorded votes during the election because we are uncertain that all machines would have behaved in a similar manner. Further, we believe that expected forms of voter behavior to select a candidate in the Florida-13 race were not thoroughly tested. While ES&S asserts that such processes would have no effect on the iVotronic DRE's ability to capture and record a voter's selection, we did not identify testing that verified this. Further, while ES&S states that the testing of a deliberately miscalibrated iVotronic DRE would result in a clearly visible indication of which candidate was selected, we could not identify any testing that demonstrated this.

We acknowledge that the large undervote in Florida's 13th Congressional District race could have been caused by voters who intentionally undervoted or voters who did not properly cast their ballots, potentially because of issues related to the human interaction with the ballot. However, the focus of our review, as agreed with the task force, was to review whether the voting systems could have contributed to the large undervote. ES&S also provided technical comments, which we incorporated as appropriate.

Mr. Chairman, this completes my prepared statement. I would be happy to respond to any questions you or other members of the task force may have at this time.

**Contacts and
Acknowledgments**

For further information about this statement, please contact Keith Rhodes, Chief Technologist, at (202) 512-6412 or rhodesk@gao.gov, or Naba Barkakati at (202) 512-4499 or barkakatin@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Other key contributors to this statement include James Ashley, James Fields, Jason Fong, Cynthia Grant, Geoffrey Hamilton, Richard Hung, John C. Martin, Jan Montgomery, Jennifer Popovic, Sidney Schwartz, and Daniel Wexler.

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IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

CHRISTINE JENNINGS, a nominee of the
Democratic party for Representative in Congress
from the State of Florida's Thirteenth Congressional
District,

Plaintiff,

v.

CASE NO. 2006 CA 2973

ELECTION CANVASSING COMMISSION
OF THE STATE OF FLORIDA, et al.,

Defendants.

ELLEN FEDDER, et al.,

Plaintiffs,

v.

CASE NO. 2006 CA 2996
(Consolidated)

ELECTIONS CANVASSING COMMISSION, et al.,

Defendants.

ORDER

This cause is before the Court upon a Motion by the Secretary of State to authorize the Government Accountability Office to inspect and test certain voting equipment subject to the February 21, 2007 Order of this Court approving a Stipulation with respect to the sequestration of voting equipment used in the 2006 Congressional District 13 election in Sarasota County. This Court having been advised that there is no objection to the Motion from any party, it is

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ORDERED AND ADJUDGED that the United States Government Accountability Office may conduct the technical tests recited in paragraphs 5(a) and (b) of the Secretary's Motion upon certain voting equipment used in the Sarasota County 2006 Congressional District 13 race.

SO ORDERED this 13th day of November, 2007.


 William Gary
 Circuit Judge

Confirmed copies to: All counsel of record

**IN THE CIRCUIT COURT FOR THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION**

CHRISTINE JENNINGS, nominee of the
Democratic Party for Representative in
Congress from the State of Florida's
Thirteenth Congressional District,

Plaintiff,

Case No.: 2006 CA 2973

v.

ELECTIONS CANVASSING COMMISSION OF
THE STATE OF FLORIDA; SARASOTA COUNTY
CANVASSING BOARD; KATHY DENT, as
SARASOTA COUNTY SUPERVISOR OF ELECTIONS;
KURT S. BROWNING, as SECRETARY OF STATE
OF THE STATE OF FLORIDA; AMY TUCK, as
DIRECTOR OF THE DIVISION OF ELECTIONS OF
THE STATE OF FLORIDA; VERN BUCHANAN; and
ELECTION SYSTEMS & SOFTWARE, INC.,

Defendants.

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CLERK CIRCUIT COURT
LEON COUNTY, FLORIDA

PLAINTIFF JENNINGS'S NOTICE OF VOLUNTARY DISMISSAL

Pursuant to Florida Rule of Civil Procedure 1.420(a)(1)(A), Plaintiff Christine Jennings hereby files a notice of voluntary dismissal of the above-captioned action. Ms. Jennings is dismissing this action with prejudice, and this dismissal shall have no preclusive effect on her action under the Federal Contested Elections Act, 2 U.S.C. §§ 381-396, currently pending before the United States House of Representatives or on the *Fedder* individual-voter plaintiffs' action currently pending in this Court.

INTRODUCTION

Ms. Jennings brought this election-contest proceeding under Section 102.168, Florida Statutes, on November 20, 2006. The action has always focused on



objectives: (1) ensuring that Sarasota County's iVotronic system manufactured by Election Systems & Software, Inc. ("ES&S") was subjected to thorough and independent testing to find out why 18,000 congressional ballots turned up "blank" in the November 2006 general election; and (2) determining whether the official certified winner of the election for Representative in Congress from Florida's Thirteenth District actually is entitled to the seat. Actions recently taken by the special Task Force on the Florida-13 Election commissioned by the United States House of Representatives (the "House Task Force"), along with Congress's investigative arm, the Government Accountability Office ("GAO"), have now ensured that both objectives will be met. Therefore, this litigation can come to an end.

Last month, GAO reported to the House Task Force its initial findings on the testing of the iVotronic machines and source code conducted to date by the State of Florida and Sarasota County. GAO found that these tests simply were "not enough to provide reasonable assurance that the iVotronic [system] did not contribute to the undervote" in the congressional race for Florida's Thirteenth District. GAO Rpt. 3 (attached here as Exhibit A). GAO determined that the "number of machines tested was too small" and that the "machines were not tested for all the different ways a voter can select a candidate." *Id.* Finally, GAO found that, despite voters' numerous complaints about difficulty getting the touchscreens to register their votes, there had not been "*any* prior testing that would help us understand the effects of a miscalibrated touchscreen." *Id.* (emphasis added). GAO therefore proposed conducting additional, more thorough tests on the iVotronic machines and, with the authorization of the House of Representatives, contacted the State and County for permission. The State in turn moved

to modify the Court's February 21, 2007 order sequestering certain iVotronic equipment, so that GAO may conduct the necessary tests. The Court granted that motion on November 13, 2007. GAO has now begun its testing, which likely will be completed within weeks.

It is because Ms. Jennings was successful in ensuring that a sizeable sample of the voting equipment used in the November 2006 election was sequestered and preserved (rather than re-used or sold, as Sarasota County had initially proposed), that GAO is now able to undertake the type of thorough and independent testing that Ms. Jennings has sought since the inception of this lawsuit. After GAO presents the findings from the new tests, the House Task Force will be able to make a recommendation to the full House Committee on Administration and then to the entire House of Representatives about which candidate is entitled to represent Florida's Thirteenth District in the 110th Congress. That decision, of course, is one that the Federal Constitution fully empowers the House to make, and it is not subject to review in the federal or state courts. *See* U.S. CONST. art. I, § 5 ("Each House shall be the Judge of the Elections, Returns and Qualifications of its own Members."); *Morgan v. United States*, 801 F.2d 445, 447-50 (D.C. Cir. 1986) (Scalia, J.). Therefore, Ms. Jennings has achieved the objectives of her lawsuit and now may voluntarily dismiss it.

HISTORY OF THE LITIGATION

The general election for Representative in Congress from Florida's Thirteenth District between Christine Jennings and Vern Buchanan was held on November 7, 2006, with early voting taking place from October 23, 2006, through November 5, 2006. During the early-voting period, the Sarasota County Supervisor of Elections received

multiple reports from voters who experienced difficulties getting their votes for Ms. Jennings to register on the iVotronic touchscreen voting system manufactured by ES&S. In fact, Ms. Jennings's attorney wrote to the Supervisor about these issues the week before the election and attempted to meet with her the day before the election. Based on these reports, the Supervisor sent a message to all pollworkers on November 3, 2006, instructing them to remind voters not to "overlook" the Thirteenth District congressional race. But as became clear when the results were tallied on the evening of November 7, 2006, the problems were even worse than imagined. An astounding 18,412 ballots cast in Sarasota County showed no vote for either Ms. Jennings or Mr. Buchanan. This translated to an undervote rate of almost 15% for those voting on the iVotronic touchscreen system. In contrast, the undervote rate in the congressional race for Sarasotans voting by absentee ballots, which were not cast on the County's iVotronic system, was only 2.5%. And the congressional undervote rate in the district's other counties also was only 2.5%.

On November 20, 2006, when the State of Florida officially certified that Mr. Buchanan had won the election by 369 votes, Ms. Jennings filed this election contest under Section 102.168 of the Florida Statutes. She alleged that malfunction of Sarasota County's iVotronic system had cost her the election and named as defendants the Secretary of State, the State Elections Canvassing Commission, the Director of the State's Division of Elections, the Sarasota County Canvassing Board, the Sarasota County Supervisor of Elections, and Mr. Buchanan. Ms. Jennings moved for immediate production of the iVotronic machines, source code, and related equipment from the Defendants who were in possession of this material (the Secretary of State and the

Supervisor of Elections), so that her experts could test the equipment and analyze whether and how the iVotronic system had malfunctioned.

As provided for in the election-contest statute, this Court held an immediate hearing on Ms. Jennings's discovery requests on November 21, 2006. *See* Section 102.168(7), Florida Statutes. At that hearing, the State and County Defendants represented that they were powerless to respond to Ms. Jennings's discovery requests because, in the case of the State, the source code she had requested was "owned by ES&S," and in the case of the County, it had an "agreement with ES&S . . . to not releas[e] any of these items." Hr'g Tr. at 26, 30 (Nov. 21, 2006). Given Defendants' representations about their inability to produce the requested discovery, the Court ordered that ES&S be given an opportunity to be heard before it would rule on Ms. Jennings's requests for production. Because it was clear that ES&S's presence in the suit would be necessary and proper to a complete determination of the cause, and because the other Defendants represented that ES&S was claiming an interest adverse to Ms. Jennings's interest in investigating the iVotronic system, she filed an amended complaint on November 30, 2006, naming ES&S as an additional Defendant. *See* Fla. R. Civ. P. 1.210(a).

On December 1, 2006, three Defendants — the Secretary of State, the Director of the State's Division of Elections, and the Sarasota County Canvassing Board — all moved to dismiss Ms. Jennings's action against them on the ground that they were not expressly named as "indispensable and proper party defendant[s]" in Florida's election-contest statute. *See* Section 102.168(4), Florida Statutes. But upon receiving Ms. Jennings's opposition brief citing authority that flatly contradicted their argument (*see*,

e.g., *State ex rel. Knott v. Haskell*, 72 So. 651, 659, 663 (Fla. 1916)), the three Defendants withdrew their motions. None of the other Defendants filed motions to dismiss on this or any other ground at any point in the litigation.

On December 19 and 20, 2006, this Court held an evidentiary hearing on Ms. Jennings's motions to compel production of the iVotronic equipment and source code from the State and County Defendants. Solely for purposes of that hearing, the parties agreed to assume that the materials sought were trade secrets. The State and County Defendants did not put on any witnesses or introduce any evidence. Instead, ES&S presented one expert witness. Ms. Jennings presented two expert witnesses and introduced evidence supporting her argument that producing the iVotronic system and source code was "reasonably necessary" to prove that machine malfunction had cost her the election. On December 29, 2006, the Court issued an order denying Ms. Jennings's requests for production because they would "gut[] the protections afforded those who own the trade secrets," namely ES&S. Order at 2 (Dec. 29, 2006). Ms. Jennings immediately petitioned for a writ of certiorari from the First District Court of Appeal. On June 18, 2007, the District Court denied the writ, holding that any harm from the denial of discovery could be rectified on direct appeal from a final judgment. *See Jennings v. Elections Canvassing Comm'n*, 958 So. 2d 1083, 1084 (Fla. 1st DCA 2007).

In the meantime, citing the Jennings-Buchanan congressional race as "a contributing factor" in his decision, Governor Charlie Crist proposed an end to paperless electronic voting machines throughout the State of Florida. On May 21, 2007, Governor Crist signed into law House Bill 537, which requires all votes in the State of Florida to be cast using optical scan equipment that provides a paper trail. Thus, the touchscreen

iVotronic system manufactured by ES&S is now banned from use in future elections in the State of Florida.

In accordance with the timeline mandated by the Federal Contested Elections Act (FCEA), 2 U.S.C. §§ 381-396, Ms. Jennings also filed an action in the United States House of Representatives on December 20, 2006. *See id.* § 382(a) (requiring federal contests be filed “within thirty days” after state election officials declare congressional election results). The House of Representatives then wrote to the District Court to express its concern that the Florida courts had “declined to order[] the requested access to the hardware and software (including the source code) needed to test [Ms. Jennings’s] central claim: voting machine malfunction.” Ltr. from Congresswoman Millender-McDonald to J. Wheeler (Jan. 4, 2007). As the House noted, the “question of access to this evidence . . . bears decisively on the prospect of conclusively establishing who was duly elected on November 7th from this Congressional district.” *Id.* And the House stated that it would be “well served in its own deliberations by having before it a complete record” based on “access to relevant and critical evidence.” *Id.*

Thus, Ms. Jennings took steps to ensure that relevant and critical evidence would be preserved for the House of Representatives’ investigation. She negotiated with Defendants (and with the House Committee on Administration’s staff) a stipulation requiring the County to preserve and sequester iVotronic equipment that it did not need for the March 2007 local election. That stipulation was necessary because the County previously had proposed selling the iVotronic machines. *See* Defendant Dent’s Notice to Court and Motion for Authorization (Jan. 19, 2007). Because Ms. Jennings successfully negotiated the stipulation, which this Court then entered as an Order on February 21,

2007, the County was prevented from selling or otherwise tampering with the iVotronic equipment, and critical evidence was preserved and has now been made available for examination and testing by GAO.

Although resolving this matter has taken far longer than Ms. Jennings had hoped when she initially filed her election contest on November 20, 2006, the testing and analysis by the House of Representatives and GAO will finally allow the voters of Sarasota County to learn what really happened to those 18,000 "blank" ballots and to determine whether the person who has been representing them in Congress since January 2007 is truly their elected representative. These are the objectives that Ms. Jennings sought to achieve all along. Because they have now been met, this litigation can come to an end.

CONCLUSION

Under Florida Rule of Civil Procedure 1.420(a)(1)(A), Plaintiff Christine Jennings hereby notices the voluntary dismissal, with prejudice, of this election-contest proceeding. This dismissal will have no preclusive effect on her action under the Federal Contested Elections Act currently pending before the United States House of Representatives or on the *Fedder* individual-voter plaintiffs' action currently pending in this Court.

Respectfully submitted this 26th day of November, 2007 by:


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I HEREBY CERTIFY that a copy of this Notice of Voluntary Dismissal was furnished to the following by e-mail and/or United States Mail, this 26th day of November, 2007:

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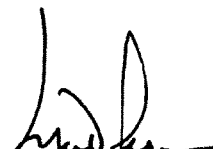
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GAO

United States Government Accountability Office**Statement before the Task Force on
Florida-13, Committee on House
Administration, House of Representatives**

For Release on Delivery
Expected at 4:00 p.m. EDT
Tuesday, October 2, 2007

ELECTIONS**Further Testing Could
Provide Increased but Not
Absolute Assurance That
Voting Systems Did Not
Cause Undervotes in
Florida's 13th
Congressional District**

Statement of Dr. Nabajyoti Barkakati
Senior-Level Technologist
Applied Research and Methods



GAO-08-97T



October 2, 2007



Highlights of GAO-08-97T, a statement before the Task Force on Florida-13, Committee on House Administration, House of Representatives

Why GAO Did This Study

In November 2006, about 18,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District (FL-13). After the contesting of the election results in the House of Representatives, the task force unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. GAO agreed with the task force on an engagement plan, including the following review objectives:

- (1) What voting systems were used in Sarasota County and what processes governed their use?
- (2) What was the scope of the undervote in Sarasota County in the general election? (3) What tests were conducted on the voting systems in Sarasota County prior to the general election and what were the results of those tests?
- (4) Considering the voting systems tests conducted after the general election, are additional tests needed to determine whether the voting systems contributed to the undervote? To conduct its work, GAO met with officials from the State of Florida, Sarasota County, and Election Systems and Software (ES&S)—the voting systems manufacturer—and reviewed voting systems test documentation. GAO analyzed election data to characterize the undervote. On the basis of its assessments of prior testing and other activities, GAO identified potential additional tests for the Sarasota County voting systems.

To view the full product, including the scope and methodology, click on GAO-08-97T. For more information, contact Keith Rhodes at (202) 512-6412 or rhodesk@gao.gov, or Nabe Barkakati at (202) 512-4499 or barkakatn@gao.gov.

ELECTIONS

Further Testing Could Provide Increased but Not Absolute Assurance That Voting Systems Did Not Cause Undervotes in Florida's 13th Congressional District

What GAO Found

In the 2006 general election, Sarasota County used voting systems manufactured by ES&S, specifically iVotronic direct recording electronic (DRE) voting systems during early and election day voting and the Unity election management system, which handles the election administration functions, such as ballot design and election reporting.

GAO's analysis of the 2006 general election data from Sarasota County did not identify any particular voting machines or machine characteristics that could have caused the large undervote in the FL-13 race. The undervotes in Sarasota County were generally distributed across all machines and precincts.

GAO's analysis found that some of the prior tests and reviews conducted by the State of Florida and Sarasota County provide assurance that certain components of the voting systems in Sarasota County functioned correctly, but they are not enough to provide reasonable assurance that the iVotronic DREs did not contribute to the undervote. Specifically, GAO found that assurance is lacking in three areas, and proposes that tests be conducted to address those areas. First, because there is insufficient assurance that the firmware in all the iVotronic DREs used in the election matched the certified version held by the Florida Division of Elections, GAO proposes that a firmware verification test be conducted on a representative sample of 115 (of the 1,499) machines that were used in the general election. Second, because an insufficient number of ways to select a candidate in the FL-13 race were tested, GAO proposes that a test be conducted to verify all 112 ways that GAO identified to select a candidate. Third, because no prior tests were identified that address the effect of a miscalibrated iVotronic DRE on the undervote, GAO proposes that an iVotronic DRE be deliberately miscalibrated to verify the accurate recording of ballots under these conditions. GAO expects these three tests would take 2 weeks, once the necessary arrangements are made.

Should the task force ask GAO to conduct the proposed tests, several matters would need to be addressed before testing could begin, including obtaining access to the iVotronic DREs that have been subject to a sequestration order, arranging for a test site, obtaining some commercially available test tools, developing test protocols and detailed test procedures, and arranging for the video recording of the tests. Sarasota County election officials have indicated that they can help GAO access the machines and provide a test site between November 26 and December 7, 2007.

Although the proposed tests could help provide increased assurance, they would not provide absolute assurance that the iVotronic DREs did not cause the large undervote in Sarasota County. The successful conduct of the proposed tests could reduce the possibility that the voting systems caused the undervote and shift attention to the possibilities that the undervote was the result of intentional actions by voters or voters that did not properly cast their votes on the voting system.

United States Government Accountability Office

Mr. Chairman and Members of the Task Force:

I am pleased to appear before the task force today to present the findings on our review of voting equipment used in Florida's 13th Congressional District (Florida-13), which we are conducting in response to your request of May 25, 2007.

In November 2006, about 18,000 undervotes were reported in Sarasota County in the race for Florida's 13th Congressional District.¹ Following the contesting of the election results in the House of Representatives, the task force met and unanimously voted to seek GAO's assistance in determining whether the voting systems contributed to the large undervote in Sarasota County. On June 14, 2007, we met with the task force and agreed upon an engagement plan, which included the following review objectives: (1) What voting systems and equipment were used in Sarasota County and what processes governed their use? (2) What was the scope of the undervote in Sarasota County in the general election? (3) To what extent were tests conducted on the voting systems in Sarasota County prior to the general election and what were the results of those tests? (4) Considering the tests that were conducted on the voting systems from Sarasota County after the general election, are additional tests needed to determine whether the voting systems contributed to the undervote?

To conduct our work, we met with officials from the Sarasota County Supervisor of Elections, the Florida Department of State and Division of Elections, and Election Systems and Software (ES&S), the manufacturer of the voting systems used in Sarasota County. We reviewed voting system documentation, including standards documents, audit and testing documentation, submissions from the contestant and contestee, and selected Florida election laws and rules. In Sarasota County, election officials demonstrated how the ES&S voting system was used to support the 2006 general election. To determine the scope of the undervote in Sarasota County, we collected election data from the Supervisor of Elections and analyzed it to determine whether the undervote could be attributed to particular voting machines or machine characteristics. Specifically, we examined ballot image logs and event logs from the voting systems and technician and incident reports generated by elections staff

¹Undervotes occur when the number of choices selected by the voter is fewer than the maximum allowed for that contest. In this case, it means ballots that did not record a selection for either candidate in the congressional contest.

from Sarasota County on election day. We also conducted various statistical analyses to characterize the undervote and to identify whether a subset of machines or precincts may have caused the large undervote.

We reviewed test documentation and interviewed officials involved with testing from ES&S, the Florida Division of Elections, and the Sarasota County Supervisor of Elections. To determine the need for additional tests, we also reviewed the tests conducted following the election, including those conducted or sponsored by the Florida Division of Elections, including the parallel testing, the examination of Sarasota County's election procedures and practices, and the source code review conducted at Florida State University's Security and Assurance in Information Technology (SAIT) laboratory. We reviewed the final reports of these tests and also met with the leader of the source code review team. Following the agreement to and execution of a non-disclosure agreement with the Florida Department of State and ES&S, we obtained access to the iVotronic source code and reviewed it to further our understanding of the system and to verify some of the source code review's findings. We analyzed the available information and identified a key set of voting system objectives that, if implemented properly, would provide reasonable assurance that the voting systems did not malfunction and cause the large undervote in Sarasota County. Using these objectives, we used the results of testing previously conducted and assessed the extent to which these key voting system objectives could be met. For those objectives that could not be adequately assured, we assessed the significance of those objectives and identified tests that could be conducted to help try to assure those key voting system objectives were met. For each test, we identified resources that would be required, including time and manpower.

We provided a draft of this report to the Florida Department of State, ES&S, and the Sarasota County Supervisor of Elections for their review and comments. The Florida Department of State and ES&S also conducted a sensitivity review to ensure that business proprietary information is not disclosed in this statement.

We conducted our work from June to September 2007 in Washington, D.C.; Tallahassee and Sarasota, Florida; and Omaha, Nebraska.

Results in Brief

In the 2006 general election, Sarasota County used voting systems manufactured by ES&S, specifically iVotronic direct recording electronic (DRE) voting systems during early and election day voting and the Unity

election management system, which handles the election administration functions, such as ballot design and election reporting.

Our independent analysis of the 2006 general election data from Sarasota County confirmed the large undervote in the race for Florida's 13th Congressional District, but did not identify any particular voting machines or machine characteristics that could have caused the large undervote in the election. The undervotes in Sarasota County for the congressional race were generally distributed across all machines and precincts.

We found that some of the prior tests and reviews provide assurance that the voting systems in Sarasota County functioned correctly, but they are not enough to provide reasonable assurance that the iVotronic DRE voting systems did not contribute to the undervote. For example, prior reviews provide reasonable assurance that the Unity election management system did not contribute to the undervote, and the votes captured by iVotronic DREs at the precincts match the voter count from precinct records within acceptable margins of error.

Portions of the Florida state audit, such as the firmware comparison and parallel tests, provided useful information, but the results could not be applied to all the iVotronic DREs used in the election because the number of machines tested was too small. Additionally, the machines were not tested for all different ways a voter can select a candidate in the congressional race. We also did not find any prior testing that would help us understand the effects of a miscalibrated touch screen. To address these issues, we propose that (1) a firmware verification test, (2) a ballot test, and (3) a calibration test be conducted to try to obtain further assurance that the iVotronic DREs used in Sarasota County during the 2006 general election did not cause the undervote. The firmware verification test would compare the firmware in a representative sample of iVotronic DREs with the certified version of firmware. The ballot test would exercise 112 ways to select a candidate on 10 iVotronic DREs. The calibration test would deliberately miscalibrate an iVotronic DRE that uses the certified software and verify the functioning of the machine. We expect the testing would take 2 weeks using a staff of about 6 to 8 people, once the necessary arrangements have been made. Although the proposed tests would provide increased assurance, they would not conclusively eliminate the machines as a cause of the undervote.

Before commencing the testing, we would need to obtain access to the iVotronic DREs that have been subject to a sequestration order in the state court system of Florida, arrange for a test site, obtain some commercially

available software and hardware for the firmware comparison test, develop test protocols and detailed test procedures, and arrange for video recording of the test. Sarasota County election officials have indicated that working around the county's election schedules, they could help us access the machines and provide a test site between November 26 and December 7, 2007.

Our proposed tests could help reduce the possibility that the undervote was caused by the iVotronic DREs. However, even after completing the tests, we would not have absolute assurance that the iVotronic DREs did not play any role in the large undervote. Absolute assurance is impossible to achieve because we are unable to recreate the conditions of the election in which the undervote occurred. By successfully conducting the proposed tests, we could reduce the possibility that the iVotronic DREs were the cause of the undervote and shift attention to the possibilities that the undervote was the result of intentional actions by the voter or voters that did not properly cast their votes on the voting system.

Draft copies of this statement were provided to the Secretary of State of Florida, the Supervisor of Elections of Sarasota County, and ES&S for their review and comment. The Florida Department of State provided technical comments, which we incorporated. The Sarasota County Supervisor of Elections did not provide us comments.

In its comments, ES&S stated that it believes that the collective results of prior testing have demonstrated that the voting systems worked properly in Florida's 13th Congressional District race, and that the focus should be on testing the effect of the ballot display on the undervote. We disagree that the prior test results adequately demonstrate that the voting systems could not have contributed to the undervote. Our analysis identified three areas where further testing could provide increased assurance that the undervote was not caused by the voting systems. We agree with ES&S that the large undervote in Florida's 13th Congressional District race could have been caused by voters who intentionally undervoted or voters who did not properly cast their ballots, potentially because of issues related to the human interaction with the ballot. However, our review focused on whether the voting systems could have contributed to the large undervote. ES&S also provided technical comments, which we incorporated as appropriate.

Background

The 13th Congressional District of Florida comprises DeSoto, Hardee, Sarasota, and parts of Charlotte and Manatee Counties. In the November 2006 general election, there were two candidates in the race to represent the 13th Congressional District: Vern Buchanan, the Republican candidate, and Christine Jennings, the Democratic candidate. The State of Florida certified Vern Buchanan the winner of the election. The margin of victory was 369 votes out of a total of 238,249 votes counted. Table 1 summarizes the results of the election and shows that the results from Sarasota County exhibited a significantly higher undervote rate than in the other counties in the congressional district.

Table 1: Results from 2006 General Election for Florida Congressional District 13

County	Buchanan	Jennings	Undervotes	Total ballots cast	Percentage undervote
Charlotte	4,460	4,277	225	8,962	2.51
DeSoto	3,471	3,058	142	6,672	2.13
Hardee	2,629	1,886	269	4,584	5.87
Manatee	50,117	44,432	2,274	96,828	2.35
Sarasota	58,632	65,487	18,412	142,532	12.92
Total	119,309	118,940	21,322	259,578	

Source: GAO analysis of Florida Division of Elections, Charlotte County, DeSoto County, Hardee County, Manatee County, and Sarasota County data.

Note: Numbers do not add up because of overvotes – where voters select more than the maximum number of candidates allowed in a race; in this case, a ballot that had votes for both Buchanan and Jennings.

In Florida, the Division of Elections in the Secretary of State's office helps the Secretary carry out his or her responsibilities as the chief election officer. The Division of Elections is responsible for establishing rules governing the use of voting systems in Florida. Voting systems cannot be used in any county in Florida until the Florida Division of Elections has issued a certification of the voting system's compliance with the Florida Voting System Standards.² The Florida Voting Systems Certification program is administered by the Bureau of Voting Systems Certification in the Division of Elections.

²Florida Department of State, *Florida Voting System Standards*, Form DS-DE 101 (Jan. 12, 2005).

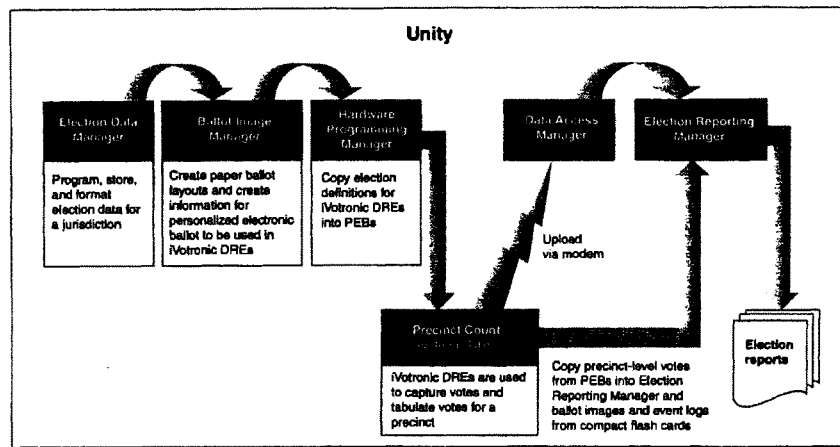
An elected supervisor of elections is responsible for implementing elections in each county in Florida in accordance with Florida election laws and rules. The supervisor of elections is responsible for the purchase and maintenance of the voting systems as well the preparation and use of the voting systems to conduct each election.

Sarasota County Used ES&S Voting Systems in 2006 General Elections

In the 2006 general election, Sarasota County used voting systems manufactured by ES&S. The State of Florida has certified different versions of ES&S voting systems. The version used in Sarasota County was designated ES&S Voting System Release 4.5, Version 2, Revision 2, and consisted of iVotronic DREs, a Model 650 central count optical scan tabulator for absentee ballots, and the Unity election management system. It was certified by the State of Florida on July 17, 2006. The certified system includes different configurations and optional elements, several of which were not used in Sarasota County.

The election management part of the voting system is called Unity; the version that was used was 2.4.4.2. Figure 1 shows the overall election operation using the Unity election management system and the iVotronic DRE.

Figure 1: Overview of Election Operation Using the Unity Election Management System and iVotronic DRE

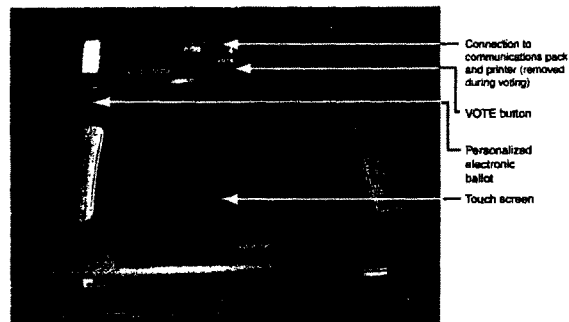


Source: GAO.

Sarasota County used iVotronic DREs for early and election day voting. Specifically, Sarasota County used the 12-inch iVotronic DRE, hardware version 1.1 with firmware version 8.0.1.2.¹ Some of the iVotronic DREs are configured with Americans with Disabilities Act (ADA) functionality, which includes the use of audio ballots. The iVotronic DRE uses a touch screen—a pressure-sensitive graphics display panel—to display and record votes (see fig. 2).

¹The certified version of ES&S Voting System Release 4.5, Version 2, Revision 2, specifies the use of iVotronic hardware version 1.0. According to Florida Division of Election officials, hardware version 1.1 of the iVotronic DRE has been available since at least 2004 and should have been included as a part of the certification for ES&S Voting System Release 4.5, Version 2, Revision 2. According to ES&S officials, iVotronic firmware version 8.0.1.2 runs in exactly the same manner on hardware versions 1.0 and 1.1.

Figure 2: The iVotronic DRE Voting System and Its Components.



Source: GAO.

The machine has a storage case that also serves as the voting booth. The operation of the iVotronic DRE requires using a personalized electronic ballot (PEB), which is a storage device with an infrared window used for transmission of ballot data to and from the iVotronic DRE. The iVotronic DRE has four independent flash memory modules, one of which contains the program code—firmware—that runs the machine and the remaining three flash memory modules store redundant copies of ballot definitions, machine configuration information, ballots cast by voters, and event logs. The iVotronic DRE includes a VOTE button that the voter has to press to cast a ballot and record the information in the flash memory. The iVotronic DRE also includes a compact flash card that can be used to load sound files onto iVotronic DREs with ADA functionality. The iVotronic DRE's firmware can be updated through the compact flash card. Additionally, at the end of polling, the ballots and audit information are to be copied from the internal flash memory module to the compact flash card.

To use the iVotronic DRE for voting, a poll worker activates the iVotronic DRE by inserting a PEB into the PEB slot after the voter has signed in at the polling place. After the poll worker makes selections so that the appropriate ballot will appear, the PEB is removed and the voter is ready to begin using the system. The ballot is presented to the voter in a series of

display screens, with candidate information on the left side of the screen and selection boxes on the right side (see fig. 3).

Figure 3: Second Ballot Page Showing the Congressional and Gubernatorial Races in Sarasota County's 2006 General Election

U.S. REPRESENTATIVE IN CONGRESS 13TH CONGRESSIONAL DISTRICT (Vote for One)		
Mark Buchanan	REP	<input type="checkbox"/>
Christine Jennings	DEM	<input type="checkbox"/>

STATE GOVERNOR AND LIEUTENANT GOVERNOR (Vote for One)		
Charlie Crist	REP	<input type="checkbox"/>
Jeff Kottkamp		
Jin Baele	DEM	<input type="checkbox"/>
Beryl L. Jones		
Rex Linn	REP	<input type="checkbox"/>
Tom Macklin		
Richard Paul Bushinsky	REP	<input type="checkbox"/>
Dr. Jon Smith		
John Wayne Smith	REP	<input type="checkbox"/>
James J. Kearney		
Karl C.C. Bohn	REP	<input type="checkbox"/>
Carol Castagnaro		
Write-In		<input type="checkbox"/>

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Source: Sarasota County Supervisor of Elections.

The voter can make a selection by touching anywhere on the line, and the iVotronic DRE responds by highlighting the entire line and displaying an X in the box next to the candidate's name. The voter can also change his or her selection by touching the line corresponding to another candidate or by deselecting his or her choice. "Previous Page" and "Next Page" buttons are used to navigate the multipage ballot. After completing all selections, the voter is presented with a summary screen with all of his or her selections (see fig. 4). From the summary screen, the voter can change any selection by selecting the race. The race will be displayed to the voter on its own ballot page. When the voter is satisfied with the selections and has reached the final summary screen, the red VOTE button is illuminated, indicating the voter can now cast his or her ballot. When the VOTE button is pressed, the voting session is complete and the ballot is recorded on the iVotronic DRE. In Sarasota County's 2006 general election, there were nine different ballot styles with between 28 and 40 races, which required

between 15 and 21 electronic ballot pages to display, and 3 to 4 summary pages for review purposes.

Figure 4: First Summary Page in Sarasota County's 2006 General Election

Instructions	
Return to any contest by touching the contest title. To cast your ballot now, press the Vote button.	
UNITED STATES SENATOR..... No Selection Made	STATE REPRESENTATIVE..... No Selection Made
U.S. REPRESENTATIVE IN CONGR..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
GOVERNOR AND LIEUTENANT GOV..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
ATTORNEY GENERAL..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
CHIEF FINANCIAL OFFICER..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
COMMISSIONER OF AGRICULTURE..... No Selection Made	CHARTER REVIEW BOARD DISTRICT..... No Selection Made
<div style="display: inline-block; width: 40%; border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="display: inline-block; width: 40%; border-bottom: 1px solid black; margin-bottom: 5px;"></div>	
Previous Page	Summary Ballot Page 1 of 3
Next Page	

Source: Sarasota County Supervisor of Elections

Analysis of Election Data Shows that Undervote Was Distributed across All Machines and Precincts

Our analysis of the 2006 general election data from Sarasota County does not identify any particular voting machines or machine characteristics that could have caused the large undervote in Florida's 13th Congressional District race. The undervotes in Sarasota County for the congressional race were generally distributed across all machines and precincts. Using voting system data that we obtained from Sarasota County, we found that 1,499 iVotronic DREs recorded votes in the 2006 general election; 84 iVotronic DREs recorded votes during early voting, and 1,415 iVotronic DREs recorded votes on election day.⁴ Using these data, we verified that the vote counts for the contestant, contestee, and undervotes match the reported vote totals for Sarasota County in Florida's 13th Congressional District race. As can be seen in table 2, the undervote rate in early voting was significantly higher than in election day voting.⁵

Table 2: Undervotes in Florida's 13th Congressional District Race during Early and Election Day Voting

	All voters	Early voters	Election day voters
Machines	1,499	84	1,415
Ballots cast	119,919	30,877	89,042
Undervotes	17,846	5,445	12,401
Undervote rate	14.86%	17.63%	13.93%

Source: GAO analysis of Sarasota County data.

The range of the undervote rate for all machines was between 0 and 49 percent, with an average undervote rate of 14.3 percent. When just the early voting machines are considered, the undervote rate ranged between 5 and 28 percent. The largest number of undervotes cast on any one machine on election day was 39. While the range of ballots cast on any one machine on election day was between 1 and 121, the median number of

⁴Election day voting is the casting of ballots on election day at polling places. Absentee and early voting are programs that permit eligible persons to vote prior to election day. Absentee voting is conducted by mail in advance of election day and early voting is generally in-person voting in advance of election day at specific polling locations.

⁵Early and election day ballots include provisional ballots cast during those respective stages of voting and included in the vote totals. 160 provisional ballots were included in the vote totals. 37 provisional ballots were excluded.

Because the absentee ballots were not cast using iVotronic voting systems, we did not verify the absentee ballot counts. When absentee ballots are included, a total of 142,532 ballots were cast and a total of 18,412 undervotes were recorded.

ballots cast on any one machine was 66. The range of undervote rate by precinct was between 0 and 41 percent, and the average undervote by precinct was about 14.8 percent.

Prior Tests and Reviews Provide Some Assurance, but Do Not Provide Reasonable Assurance That the iVotronic DREs Did Not Contribute to the Undervote

Prior to the elections, Sarasota County's voting systems were subjected to several different tests that included testing by the manufacturer, certification testing by the Florida Division of Elections, testing by independent testing authorities, and logic and accuracy testing by Sarasota County's Supervisor of Elections. After the 2006 general election, an audit of Sarasota County's election was conducted by the State of Florida that included a review of the iVotronic source code, parallel tests, and an examination of Sarasota County's election procedures. Although these tests and reviews provide some assurance, as do certain controls that were in place during the election, that the voting systems in Sarasota County functioned correctly, they do not provide reasonable assurance that the iVotronic DREs did not contribute to the undervote.

Prior Tests and Reviews of Sarasota County's Voting Systems Provide Useful Information, but Have Some Shortcomings

According to ES&S officials, ES&S tested the version of the iVotronic DRE that was used in Sarasota County in 2001-2002, but they could not provide us documentation for those tests because the documentation had not been retained.

The Florida Division of Elections conducted certification testing of the iVotronic DRE and the Unity election management system before Sarasota County acquired the system from the manufacturer. The certification process included tests of the election management system and the conduct of mock primary and general elections on the entire voting system. ES&S Voting System, Release 4.5, Version 2, Revision 2, was certified by the Florida Division of Elections on July 17, 2006. According to Florida Division of Elections officials, testing of each version focuses on the new components, and components that were included in prior versions are not as vigorously tested. The 8.0.1.2 version of the iVotronic firmware was first tested as a part of ES&S Release 4.5, Version 1, which was certified in 2005. Version 2 introduced version 2.4.4.2 of the Unity Election Management System, which was certified in August 2005. Certification testing was conducted on software that was received from an independent test authority, who witnessed the building of the firmware from the source code. An independent test authority also conducted environmental testing

of the iVotronic DRE in 2001 that was relied upon by the Florida Division of Elections for certification.

A logic and accuracy test was conducted by Sarasota County on October 20, 2006, on 32 iVotronic DREs, and it successfully verified that all ballot positions on all nine ballot styles could be properly recorded. In addition, the use of a provisional ballot and audio ballot were tested, as well as machines configured for early voting with all nine ballot styles.

After the 2006 general election, the Florida Division of Elections conducted an audit of Sarasota County's 2006 general election that included two parallel tests, an examination of the certified voting system and conduct of election by Sarasota County's elections office, and an independent review of the iVotronic DRE firmware's source code. After the conduct of this audit, the audit team concluded that there was no evidence that suggested the official election results were in error or that the voting systems contributed to the undervote in Sarasota County.⁴ The parallel tests were performed using 10 iVotronic DREs—5 used in the 2006 general election and 5 that were not used. Four of the machines in each test replicated the votes cast on four election day iVotronic DREs. The fifth machine in each test used an ad hoc test script that involved picking a random vote pattern along with a specific vote selection pattern picked from 10 predetermined vote patterns for the 13th Congressional District for each ballot cast. The audit report asserts that testing a total of 10 machines is more than adequate to identify any machine problems or irregularities that could have contributed to undervotes in the Florida-13 race. However, we concluded that the results from the testing of 10 machines cannot be applied to all 1,499 iVotronic DREs used during the 2006 general election because the sample was not random and the sample size was too small.

In examining whether voting systems that were used in Sarasota County matched the systems that were certified by the Florida Division of Elections, the Florida audit team examined the Unity election management system and the firmware installed on six iVotronic DREs. The audit team confirmed that the software running on the Unity election management

⁴Florida Department of State, *Audit Report of the Election Systems and Software, Inc.'s, iVotronic Voting System in the 2006 General Election for Sarasota County, Florida* (Tallahassee, Florida: Feb. 2007), and Security and Assurance in Information Technology Laboratory, Florida State University, *Software Review and Security Analysis of the ES&S iVotronic 8.0.1 2 Voting Machine Firmware* (Tallahassee, Florida: Feb. 23, 2007).

system and the firmware in the six iVotronic DREs matched the certified versions held in escrow by the Florida Division of Elections. On the basis of its review, the audit team concluded that there is no evidence to indicate that the iVotronic DREs had been compromised or changed. We agree that the test verifies that those six machines were not changed, but any extrapolation beyond this cannot be statistically justified because the size of the sample is too small. Therefore, these tests cannot be used to obtain reasonable assurance that the 1,499 machines used in the general election used the certified firmware.

A software review and security analysis of the iVotronic firmware version 8.0.1.2 was conducted by a team led by Florida State University's SALT Laboratory. The eight experts in the software review team attempted to confirm or refute many different hypotheses that, if true, might explain the undervote in the race for the 13th Congressional District. In doing so, they made several observations about the code, which we were able to independently verify. The software review and our verification of the observations were helpful, but a key shortcoming was the lack of assurance whether the source code reviewed by the SALT team or by us, if compiled, would correspond to the iVotronic firmware that was used in Sarasota County for the 2006 election. According to ES&S and Florida Division of Elections officials, in May 2005 an independent testing authority witnessed the process of compiling the source code and building the version of firmware that was eventually certified by the Florida Division of Elections. According to ES&S officials, if necessary, ES&S can recreate the firmware from the source code, but the firmware would not be exactly identical to the firmware certified by the Florida Division of Elections because the embedded date and time stamp in the firmware would be different.

The software review team also looked for security vulnerabilities in software that could have been exploited to cause the undervote. Although the team found several software vulnerabilities, the team concluded that none of them were exploited in Sarasota in a way that would have contributed to the undervote. We did not independently verify the team's conclusion.

**Reasonable Assurance of
Some Voting System
Objectives Has Been
Achieved**

The Unity election management system and the iVotronic DREs are the major voting system components that may require testing to determine whether they contributed to the large undervote in Sarasota County. Our review of tests already conducted and documentation from the election provide us reasonable assurance that the key functions of the Unity

election management system—election definition and vote tabulation—did not contribute to the undervote. The election definitions created using the Unity election management system are tested during logic and accuracy testing to demonstrate that they include all races, candidates, and issues and that each of the items can be selected by a voter. The votes tabulated on the iVotronic DRE at each precinct matched the data uploaded to the Unity election management system, and the totals from the precinct results tapes agree with that obtained by Unity. Further, the state audit confirmed that the Unity election management system software running in Sarasota County matched the escrowed version certified by the Florida Division of Elections.

We have reasonable assurance that the number of ballots recorded by the iVotronic DREs is correct because this number is very close to the number of people recorded on the precinct registers as showing up at the polling places to vote either during early voting or on election day. This assurance also allows us to conclude that issues, such as votes cast by “fleeing voters”—votes that are cast by poll workers for voters who leave the polling place before pressing the button to cast the vote—and the potential loss of votes during a system shutdown, did not affect the undervote in this election. If these issues had occurred, they would have caused a discrepancy between the number of voters who sign in at the polling place to vote and the public counts recorded on the iVotronic DREs.

We have reasonable assurance that provisional ballots were appropriately handled by the iVotronic DREs and the Unity election management system. We also verified that during the Florida certification test process, the Division of Elections relied on successful environmental and shock testing conducted by an independent test authority.

**Reasonable Assurance
That All iVotronic DREs
Used in the 2006 General
Election Used Software
Certified by the Florida
Division of Elections Is
Lacking**

We found that prior testing and activities do not provide reasonable assurance that all iVotronic DREs used in Sarasota County on election day were using the hardware and firmware certified for use by the Florida Division of Elections. Sarasota County has records indicating that only certified versions were procured from ES&S, and the firmware version is checked in an election on the zero and results tapes. However, because there was no independent validation of the system versions, we cannot conclude that no modifications were made to the systems that would have likely made them inconsistent with the certified version. As we previously mentioned, the firmware comparison of only 6 iVotronic DREs in the state audit is insufficient to support generalization to all 1,499 iVotronic DREs that recorded votes during the election. Without reasonable assurance that

all iVotronic DREs are running the same certified firmware, it is difficult for us to rely on the results of other testing that has been conducted, such as the parallel tests or the logic and accuracy tests.

The Ability of Voters to Make Selections in Different Ways and Have Their Votes Properly Recorded Has Not Been Fully Tested

Prior testing of the iVotronic DREs only verified 13 of the 112 ways that we identified that a voter may use to select a candidate in Florida's 13th Congressional District race. Specifically, on an iVotronic DRE, a voter could (1) initially select either candidate or neither candidate (i.e. undervote), (2) change the vote on the initial screen, and (3) use a combination of page back and review screen options to change or verify his or her selection before casting the ballot. By taking into account these variations, our analysis has found at least 112 different ways a voter could make his or her selection in Florida's 13th Congressional District race, assuming that it was the only race on the ballot. Out of 112 different ways to select a candidate in the congressional race, Florida certification tests and the Sarasota County logic and accuracy tests verified 3 ways to select a candidate; and the Florida parallel tests verified 10 ways to select a candidate—meaning that of the 112 ways, 13 have been tested. By not verifying these different ways to select a candidate, we do not have reasonable assurance that the system will properly handle expected forms of voter behavior.

The Effect of Miscalibrated iVotronic DREs Is Unclear

During the setup of the iVotronic DRE, sometimes referred to as the clear and test process, the touch screens are calibrated by using a stylus to touch the screen at 20 different locations. The calibration process is designed to align the display screen with the touch screen input. It has been reported that a miscalibrated machine could affect the selection process by highlighting a candidate that is not aligned with what the voter selected. We identified two reported cases on election day where the miscalibration of the iVotronic DRE led to its closure and discontinued use for the rest of the day. While a miscalibrated machine could certainly make an iVotronic DRE harder to use, it is not clear it would have helped to contribute to the undervote. We did not identify any prior testing or activities that would help us understand the effect of a miscalibrated iVotronic DRE on the undervote.

Further Tests Could Provide Increased but Not Absolute Assurance That the iVotronic DREs Used in the Election Did Not Cause the Undervote

On the basis of our analysis of all prior test and audit activities, we propose that a firmware verification test, a ballot test, and a calibration test be conducted to try to obtain increased assurance that the iVotronic DREs used in Sarasota County during the 2006 general election did not cause the undervote.

We propose that the firmware verification testing be started first, once the necessary arrangements have been made, such as access to the needed machines and the development of test protocols and detailed test procedures. Once we have reasonable assurance that the iVotronic DREs are running the same certified firmware, we could conduct the ballot test and calibration test on a small number of machines to determine whether it is likely the machines accurately recorded and counted the ballots. If the firmware verification tests are successfully conducted, we would have much more confidence that the iVotronic DREs will behave similarly when tested. If there are differences in the firmware running on the iVotronic DREs, we would need to reassess the number of machines that need to be tested for ballot testing and calibration testing in order for us to have confidence that the test results would be true for all 1,499 iVotronic DREs used during the election. In other words, if we are reasonably confident that the same software is used in all 1,499 machines, then we are more confident that the results of the other tests on a small number of machines can be used to obtain increased assurance that the iVotronic DREs did not cause the undervote. Although the proposed tests would provide increased assurance, they would not conclusively eliminate the machines as a cause of the undervote.

Conduct Firmware Testing to Verify That the Firmware in the iVotronic DREs Used in Sarasota County Matches the Certified Version

We propose to conduct a firmware verification test using a statistical sampling approach that can provide reasonable assurance that all 1,499 iVotronic DREs are running the certified version of firmware. The exact number of machines that would be tested depends on the confidence level desired and how much error can be tolerated. We propose drawing a representative sample from all the iVotronic DREs that recorded votes in the general election. With a sample size of 115 iVotronic DREs, which would be divided between sequestered and nonsequestered machines, and assuming that there are no test failures, we would be able to conclude with a 99 percent confidence level that no more than 4 percent of the 1,499 iVotronic DREs used in the election were using uncertified firmware.

We suggest a test approach similar to what was used by the Florida Division of Elections when it verified the firmware for 6 iVotronic DREs.

We estimate that the firmware testing for 115 machines could be conducted in about 5 to 7 days and would require about 5 or 6 people, once the necessary arrangements have been made. The machines would be transported to a test facility specified by Sarasota County election officials where we could perform the test. The activities involved in conducting a firmware validation test would include locating and retrieving the selected iVotronic DRE from the storage facility, transporting it to the test facility, opening the DRE, extracting the chip with the firmware, reading the contents of the chip using a specialized chip reader, and conducting a comparison between the contents and the certified firmware to determine if any differences exist. To conduct this test, we would need commercially available specialized hardware and software similar to that used by the Florida Division of Elections in its firmware comparison test.

**Conduct Ballot Testing of
iVotronic DREs to Confirm
Correct Operation**

We propose conducting ballot testing on 10 iVotronic DREs, each configured with one of the nine different ballot styles, with the 10th machine configured as an early voting machine with all nine ballot styles. We would test 112 ways to select a candidate on the early voting machine. On the election day machines, we would test the 112 different ways distributed across the 9 machines in a random manner, meaning each machine would on average record 12-13 ballots. Assuming that (1) reasonable assurance is obtained that all iVotronic DREs used during the election were using the same certified firmware, and (2) we found no failures during the ballot testing, this testing would provide increased assurance that the iVotronic DREs used during the election, both in early voting and in election day voting, were able to accurately record and count ballots when using any of the 112 ways to select a candidate in the Florida-13 race.

We would plan to code each ballot by including an identifier in the write-in candidate field for either the U.S. senator or governor's race. Using this write-in coding, we could examine the ballot image and confirm that each ballot was accurately recorded and counted by the iVotronic DRE. Any encountered failures would also be more rapidly attributed to a specific test case, and we would be able to more readily repeat the test case to determine if we have a repeatable condition. Testing 112 ways to select a candidate on a single machine would also provide us some additional assurance that the volume of ballots cast on election day did not cause a problem. We note that casting 112 ballots on a single machine is more than that cast on over 99 percent of the 1,415 machines used on election day.

We estimate the ballot testing would take about 2 to 3 days and require the equivalent of 2 people, once the necessary arrangements have been made.

**Deliberately Miscalibrate
an iVotronic DRE to
Understand the Effect on
the Undervote**

Because little is known about the effect of a miscalibrated machine on the behavior of an iVotronic DRE, we propose to deliberately miscalibrate an iVotronic DREs and verify the functioning of the machine. We propose to identify different ways to miscalibrate a ballot and to test ballots on the miscalibrated iVotronic DRE to verify that it still properly records votes. With this test we would confirm whether (1) the review screen displays the same selection in the Florida-13 race as was highlighted in the selection screen, and (2) that the vote is recorded as it was displayed on the review screen. Again, we would plan to use the write-in candidate option to verify the proper recording of the ballot. This test would demonstrate whether the system correctly records a vote for the race and hence whether it contributed to the undervote. We estimate that the calibration test could be completed in about 1 day by 2 people, once the necessary arrangements have been made.

**Several Matters Remain to
Be Addressed to Conduct
Further Testing**

Should the task force ask us to conduct the proposed testing, we want to make the task force aware of several other matters that would need to be addressed before we could begin testing. These activities would require some time and resources to complete before testing could commence.

First, we would need to gain access to iVotronic DREs that have been subject to a sequestration order in the state court system of Florida. If we do not have access to the needed machines, we would be unable to obtain reasonable assurance that the machines used on election day were using certified software, and without this assurance, the results from prior tests and any results of our ballot and calibration tests would be less meaningful because we would be unable to apply the results to all 1,499 iVotronic DREs used during the election. Second, we would need to agree upon an appropriate facility for the tests. Sarasota County Supervisor of Elections has indicated that we can use its warehouse space, but because of upcoming elections in November and January, the only time the election officials would be able to provide us this space and the necessary support is between November 26 and December 7, 2007. If testing cannot be completed during this time period, Sarasota County officials stated that they would not be able to assist us until February 2008. Third, some tests may require commercially available specialized software, hardware, or other tools to conduct the tests. We would need to make arrangements to either borrow or to purchase such testing tools before

commencing testing. Fourth, in order to conduct any tests, we would need to develop test protocols and detailed test procedures and steps. We also anticipate that we would need to conduct a dry run, or dress rehearsal, of our test procedures to ensure that our test tools function properly and that our time estimates are reasonable. Finally, we would need to make arrangements for video recording of our testing. It would be our preference to have a visual record of the tests to document the actual test conduct and to facilitate certain types of test analysis.

Other Observations on Touch Screen Voting Systems

We recognize that human interaction with the ballot layout could be a potential cause of the undervote. Although we have not explored this issue in our review, we note that there is an ongoing academic study that is exploring this issue using voting machines obtained from ES&S. We believe that such experiments could be useful and could provide insight into the ballot layout issue.

During our review, we noted that several suggestions have been offered as possible ways to establish that voters are intentionally undervoting and to provide some assurance that the voting systems did not cause the undervote. First, a voter-verified paper trail could provide an independent confirmation that the touch screen voting systems did not malfunction in recording and counting the votes from the election. The paper trail would reflect the voter's selections and, if necessary, could be used in the counting or recounting of votes. This issue is recognized in the Florida State University SALT source code review as well as the 2005 and draft 2007 Voluntary Voting Systems Guidelines prepared for the Election Assistance Commission. We have previously reported on the need to implement such a function properly.⁷ Second, explicit feedback to voters that a race has been undervoted and a prompt for voters to affirm their intent to undervote might help prevent many voters from unintentionally undervoting a race. On the iVotronic DREs, such feedback and prompts are provided only when the voter attempts to cast a completely blank ballot, but not when a voter undervotes in individual races. Third, offering a "none of the above" option in a race would provide voters with the opportunity to indicate that they are intentionally undervoting. The State of Nevada provides this option in certain races in its elections. Decisions

⁷GAO, *Elections: Federal Efforts to Improve Security and Reliability of Electronic Voting Systems Are Under Way, but Key Activities Need to Be Completed*, GAO-04-056 (Washington, D.C.: Sept. 21, 2006).

about these or other suggestions about ballot layout or voting system functions should be informed by human factors studies that assess their effectiveness in accurately recording voters' preferences, making voting systems easier to use, and preventing unintentional undervotes.

Conclusions

The high undervote encountered in Sarasota County in the 2006 election for Florida's 13th Congressional District has raised questions about whether the voting systems accurately recorded and counted the votes cast by eligible voters. Other possible reasons for the undervote could be that voters intentionally undervoted or voters did not properly cast their ballots on the voting systems, potentially because of issues relating to the interaction between voters and the ballot. The focus of our review has been to determine whether the voting systems—the iVotronic DREs, in particular—contributed to the undervote. We found that the prior reviews of Sarasota County's 2006 general election have provided valuable information about the voting systems. Our review found that in some cases we were able to rely on this information to eliminate areas of concern. This allowed us to identify the areas where increased assurances were needed to answer the questions being raised. Accordingly, the primary focus of the tests we are proposing is to obtain increased assurance that the results of the prior reviews and our proposed testing can be applied to all the iVotronic DREs used in the election. Our proposed tests involving the firmware comparison, ballot testing, and calibration testing could help reduce the possibility that the undervote was caused by the iVotronic DREs. However, even after completing the tests, we would not have absolute assurance that the iVotronic DREs did not play any role in the large undervote. Absolute assurance is impossible to achieve because we are unable to recreate the conditions of the election in which the undervote occurred. By successfully conducting the proposed tests, we could reduce the possibility that the iVotronic DREs were the cause of the undervote and shift attention to the possibilities that the undervote was the result of intentional actions by the voter or voters that did not properly cast their votes on the voting system.

Comments and Our Evaluation

We provided draft copies of this statement to the Secretary of State of Florida, the Supervisor of Elections of Sarasota County, and ES&S for review and comment. The Florida Department of State provided technical comments, which we incorporated. The Sarasota County Supervisor of Elections appreciated the opportunity to review the draft, but provided us no comments.

In its comments, ES&S stated that it believes that the collective results of testing already conducted on the Sarasota County voting systems have demonstrated that they performed properly and as they were designed to function and that all votes were accurately captured and counted as cast in Florida's 13th Congressional District race. Further, ES&S asserts that tests and analyses should be conducted to examine the effect of the ballot display on the undervote, which it believes is the most probable cause of the undervote.

We disagree that the collective results of testing already conducted on the Sarasota County voting systems adequately demonstrate that the voting systems could not have contributed to the undervote in the Florida-13 race. First, as we have cited, we do not have adequate assurance that all the iVotronic DREs used in Sarasota County used the firmware certified by the Florida Division of Elections. Without this assurance, it is difficult for us to apply the results from the other tests to all 1,499 machines that recorded votes during the election because we are uncertain that all machines would have behaved in a similar manner. Further, we believe that expected forms of voter behavior to select a candidate in the Florida-13 race were not thoroughly tested. While ES&S asserts that such processes would have no effect on the iVotronic DRE's ability to capture and record a voter's selection, we did not identify testing that verified this. Further, while ES&S states that the testing of a deliberately miscalibrated iVotronic DRE would result in a clearly visible indication of which candidate was selected, we could not identify any testing that demonstrated this.

We acknowledge that the large undervote in Florida's 13th Congressional District race could have been caused by voters who intentionally undervoted or voters who did not properly cast their ballots, potentially because of issues related to the human interaction with the ballot. However, the focus of our review, as agreed with the task force, was to review whether the voting systems could have contributed to the large undervote. ES&S also provided technical comments, which we incorporated as appropriate.

Mr. Chairman, this completes my prepared statement. I would be happy to respond to any questions you or other members of the task force may have at this time.

Contacts and Acknowledgments

For further information about this statement, please contact Keith Rhodes, Chief Technologist, at (202) 512-6412 or rhodesk@gao.gov, or Naba Barkakati at (202) 512-4499 or barkakatin@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Other key contributors to this statement include James Ashley, James Fields, Jason Fong, Cynthia Grant, Geoffrey Hamilton, Richard Hung, John C. Martin, Jan Montgomery, Jennifer Popovic, Sidney Schwartz, and Daniel Wexler.

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January 31, 2008

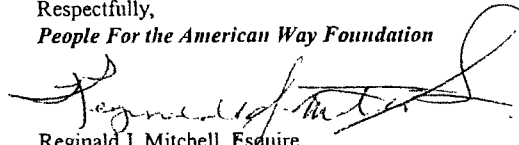
Hon. William L. Gary, Circuit Judge
2nd Judicial Circuit
Leon Co. Courthouse 365-I
301 S. Monroe Street
Tallahassee, FL 32301

Re: Jennings v. Canvassing Commission, Case No. 2006 CA 2973 &
Fedder v. Gallagher, Case No. 2006CA2996

Dear Judge Gary:

Enclosed is a courtesy copy of the Stipulated Dismissal of Voter Plaintiff's Election Contest for your information. For any questions, please contact me at (850) 877-0307 (office) or (850) 528-9550 (cell). Thank you.

Respectfully,
People For the American Way Foundation



Reginald J. Mitchell, Esquire
For the Plaintiff Voters

/rjm

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA
CIVIL DIVISION

ELLEN FEDDER, et. al.,

Plaintiffs,

v.

TOM GALLAGHER, et. al.,

Defendants.

CASE NO. 2006 CA 2996

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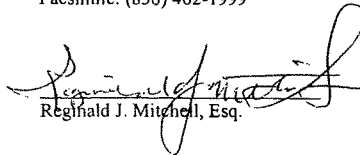
STIPULATED DISMISSAL OF VOTER PLAINTIFFS' ELECTION CONTEST


Pursuant to Rule 1.420(a)(1)(B), Florida Rules of Civil Procedure, Voter Plaintiffs Ellen Fedder, et al. and Defendants hereby stipulate to the voluntary dismissal of the above-captioned action. Voter Plaintiffs also hereby waive any and all rights they may have with regard to the Court's Anti-Spoliation Order dated February 21, 2007.

The parties further stipulate that this dismissal is with prejudice, each party bearing its, his or her own costs, fees and expenses.

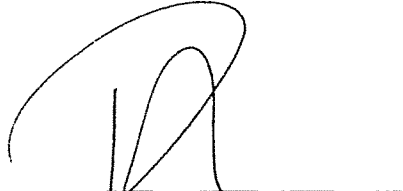
Respectfully submitted this 31st day of January, 2008.

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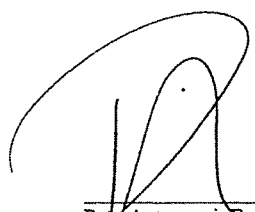
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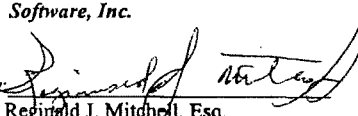
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**FOR CONTINUATION OF HOUSE REPORT 110-528
SEE PART 2**